

Transit-Oriented Development Demand Analysis

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Center for Transit-Oriented Development



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EXECUTIVE SUMMARY

MTC is conducting a “TOD Study” to address the transit oriented development opportunities in the Bay Area. This report looks at demographic characteristics of transit users to estimate the households and jobs with a preference for living/working near transit in the Bay Area, by 2030. It compares these estimates by county with ABAG *Projections 2003* and the Smart Growth Vision.

Potential Employment Demand Near Transit

The analysis of employment demand near transit incorporates both job market forces and transit qualities, including locations of current and future employment centers, the tendency of employees in certain industries commute on transit, and the projected growth of these industries regionally and by county.

Overall the market analysis suggests that that potential demand for employment near transit is nearly equivalent to ABAG’s Projections 2003 forecasts for 2030. The potential TOD demand forecast exceeds the *Projections 2003* forecast in some transit areas and falls below it in others.

The Bay Area will experience increased potential demand of more than 800,000 new jobs near transit. Currently, 1.47 million jobs, about 39% of all Bay Area jobs, are located in the proximity of fixed-guideway stations and major bus routes. CTOD estimates a total potential demand of about 2.3 million jobs near transit in 2030, constituting 44% of all Bay Area jobs in 2030.

Potential Market demand for employment near transit is projected to increase the most in Santa Clara County, San Francisco and San Mateo County. Potential demand for employment near transit is projected to increase in absolute numbers between 2000 and 2030 by county as follows: Alameda: 121,000 jobs, Contra Costa: 94,000, Marin: 29,000, Napa: 20,000, San Francisco: 136,000, San Mateo: 102,000, Santa Clara: 222,000, Solano: 39,000, and Sonoma: 84,000.

Potential Demand for Homes Near Transit

The analysis of housing demand near transit considers the current tendency of various household types and age groups to locate near transit, and the distribution and growth of the projected groups within the Bay Area. Households older than 65 are expected to have an increased preference for living near transit. The estimate included here is very conservative, in that the interest level of living close to transit is assumed to remain the same for most households, even though an increase is likely. Even so, this analysis found a substantial increased potential demand for TOD over the next 30 years.

The Bay Area will experience added potential demand of 248,000 TOD units near transit by 2030. Currently, 613,000 households, about 25% of all Bay Area households, live near high quality transit. CTOD estimates an increase in potential demand of about one-third by 2030 resulting in a total potential TOD demand of about 861,000 homes near transit in 2030.

Overall the market analysis suggests that there is a similar level of potential demand for TOD as forecast in ABAG’s transit area projections for Year 2030. The TOD demand forecasts are not as high as the future supply of new homes close to transit as estimated by ABAG in *Projections 2003*, perhaps due to conservative housing market estimation techniques, but both show positive substantial demand for additional homes close to transit. *Projections 2003* is a reasonable estimate of total future demand for housing in these areas, since many households not fitting the TOD profile will also locate near transit.

Alameda County, Santa Clara County, and San Francisco show largest growth in potential demand for homes near transit by 2030. Potential market demand for homes near transit is projected to increase in absolute numbers between 2000 and 2030 by county as follows: Alameda: 71,000 homes, Contra Costa: 31,000, Marin: 7,000, Napa: 4,000, San Francisco: 44,000, San Mateo: 13,000, Santa Clara: 48,000, Solano: 12,000, and Sonoma: 16,000.

I. EMPLOYMENT NEAR TRANSIT

This chapter provides an overview of the potential demand for transit-oriented employment space from 2000 to 2030. It describes the characteristics of current transit-oriented employment based on land use, industry breakdown, and the type and frequency of nearby transit. It also describes trends in the current real estate market and expected patterns of employment growth based on reports from commercial real estate brokers throughout the region.

Understanding the market demand for transit oriented housing and employment is critical to promoting transit-oriented development (TOD) throughout the Bay Area. Neither developers nor cities will pursue a transit-oriented development option if the demand for transit-oriented housing or employment space does not exist. Therefore, estimates of potential housing and jobs near transit for use in policymaking should correspond with the market potential for transit-oriented land use and development.

Common Characteristics of Firms Supporting Transit Use

The first step in measuring the potential demand for employment near transit is to understand the characteristics of the firms that are already located near transit. The following are some of the major known characteristics of transit-oriented firms and their transit-riding employees:

- *Ridership among employees varies significantly based on transit type.* Firms in close proximity to a rapid regional network, such as BART, have demonstrated amply higher ridership among their employees than firms near more local-serving public transit types, like county bus lines.
- *Ridership also varies by firm size.* Large firms tend to have higher levels of ridership among employees than small firms. This is partly because of attempts by these firms to reduce the number of automobile trips per worker, by providing public transit incentives.
- *As parking near work becomes more expensive, the share of employees using transit increases.* The cost of commuting has some effect on the mode to work that commuters choose.
- *Firms with a wide range of employee pay categories tend to have higher levels of transit ridership than less diverse firms.*

Some of these results were confirmed in the January 2004 report, *Travel Characteristics of Transit-Oriented Development in California*, written by Hollie M. Lund, Robert Cervero, and Richard W. Wilson.

Overview

This chapter describes where employment is currently located throughout the Bay Area, and where employment growth is expected to occur by 2030. It compares the Smart Growth Vision and *Projections 2003* forecasts developed by ABAG with a TOD-based employment forecast for each industrial sector referred to as the “CTOD Demand Estimate.” The purpose of this comparison is to reconcile the available land supply and current growth patterns in each county with the potential demand for TOD, through the year 2030.

The Current Geography of Employment

Figure 1¹ shows the top 31 centers of employment throughout the region, sorted into three categories based on the number of jobs. Because future jobs will tend to locate near existing employment centers, current employment patterns in the region affect employment growth patterns in the future.

San Francisco and Santa Clara Counties include the region's two primary employment centers, or areas with more than 520,000 employees. Access to these employment centers by transit is varied. While San Francisco has a well-established transit system with high ridership, Santa Clara is served by a more limited transit system with a significant amount of planned growth within the 2000-2030 time frame.

Contra Costa, Alameda, and San Mateo Counties also feature major centers of employment. In Contra Costa and San Mateo Counties, as well as the eastern and southern portions of Alameda County, employment growth is located near major highways: Interstates 680 and 580 in Alameda and Contra Costa, and Interstate 280 and Highway 101 in San Mateo. Employment in the western and northern parts of Alameda County is concentrated in centers that are well served by multiple types of public transit including BART and AC Transit.

¹ This figure appears on page 10. All remaining figures appear in Appendix C: Maps of Employment Centers by County.

Transit-Oriented Development Demand Analysis
Potential Employment Demand

Forecast Analysis for TOD-Based Employment

Expected Employment Growth

ABAG expects that every major sector except for Agriculture and Mining will experience 35 to 40 percent job growth between 2000 and 2030 across the region.² The Manufacturing sector will experience the slowest job growth at 36 percent, and well over half of this growth will occur in the high technology industries that are considered a subsector of Manufacturing.

Service jobs will continue to dominate the Bay Area economy and will undergo the largest proportional increase of all of the major sectors. By 2030, service jobs are expected to make up nearly 40 percent of the total employment in the Bay Area. This sector presents a challenge for real estate market analysts, because service jobs can be located in either office or retail space depending on whom they serve. Business services – a subsector that is predominantly office based – makes up one third of all service jobs in the Bay Area and will represent the largest increase in employment in this category overall. Business services do not represent all office tenants in this category; some personal services such as legal or medical services lease office space as well.

Finance, insurance, and real estate (FIRE) jobs will remain a steady six percent share of all jobs in the Bay Area from 2000 to 2030. Slightly over one quarter of these jobs are currently located in offices in San Francisco. Because this sector also includes real estate brokers and mortgage companies, employment in this sector is more scattered throughout the Bay Area than one might expect of the finance and insurance industries alone.

Forecasts for Transit-Oriented Employment

This section compares three forecasts for total employment through 2030 in the areas surrounding current and proposed transit stations: Projections 2003, Smart Growth Vision, and the CTOD demand estimate.

ABAG's Projections 2003 and the Smart Growth vision provide employment projections for the planning areas surrounding current and proposed transit throughout the region. While these forecasts do not specifically pursue a TOD-based policy, both Projections 2003 and the Smart Growth vision were designed to emphasize infill development and reduce sprawl. Therefore in these forecasts, development within the transit planning areas would be built at an increased density similar to that required for successful TOD, but with less emphasis on the mix of land uses along a transit corridor as needed to increase transit ridership.

The Projections 2003 and Smart Growth Vision forecasts are based significantly on potential development of underutilized and vacant lots in developed areas of the region. This methodology places a significant amount of employment growth in employment centers that have capacity for growth, but that are not accessible to transit. The CTOD projection reconciles the ABAG projections with the potential demand for TOD-based employment over time.

² *Projections 2003*

Regional TOD Demand and Its Relationship with Office Space

The CTOD projection estimates the number of jobs in the region that will have a strong preference for locating near a fixed-guideway station between 2000 and 2030. This projection is based on the industries that have a tendency to locate near fixed-guideway transit today. The sectors in which these jobs fall are shown in **Table 1**.

Table 1: Comparison of Estimated Demand for Transit-Oriented Employment and Region-wide ABAG Projections, 2030

Sector	ABAG Projections 2003, Estimate of Total Regional Job Growth		CTOD Potential Demand Estimate, Regional	CTOD Share of Regional Projections 2003
	2000	2030	2030	2030
<i>Total Jobs</i>	3,753,700	5,226,400	2,318,000	44%
Agriculture/Mining	35,200	36,100	500	1%
Construction	189,400	265,700	21,400	8%
Manufacturing / Wholesale	730,900	995,900	312,100	31%
Transportation, Communication, Utility	210,000	290,500	67,300	23%
Retail	594,600	817,300	228,200	28%
Finance, Insurance, Real Estate (FIRE)	249,900	345,800	257,800	75%
Service	1,450,400	2,061,100	1,341,500	65%
Government*	293,300	414,100	89,400	22%

Source: Association of Bay Area Governments, Center for Transit Oriented Development, Strategic Economics

Note: CTOD government employment shown only for north Alameda and San Francisco Counties. Numbers are rounded to nearest thousand, therefore total jobs may not add.

Currently, 39 percent of all regional employment is within the transit planning areas. By 2030, an estimated 44 percent of private-sector employment will be in firms with a preference for locating near transit. Most of these jobs will be in the Service sector and the F.I.R.E. sector (Finance, Insurance, and Real Estate). Over 75 percent of F.I.R.E. jobs will have a strong potential for locating near transit, while nearly two-thirds of all Service jobs will be highly likely to locate near transit. A quarter of all Manufacturing jobs will potentially locate near transit; these jobs are mainly in the printing and publishing industry, and office-based high technology industries.

Government jobs are not included in the CTOD potential demand estimate, except for Northern Alameda and San Francisco counties, where this sector makes up a significant share of the transit-oriented jobs and is incorporated to facilitate comparison with ABAG projections. **Appendix A** and the corresponding county chapters describe this approach to government employment in more detail. While it is possible that many Government jobs would locate near transit, the data used to calculate the demand estimate do not include the Government sector. Moreover, many positions in the Government sector would be located in civic buildings rather than private office buildings, and their development is more a matter of policy than of potential demand.

Employment Demand for TOD and the Office Market. **Table 1** shows that the potential additional TOD-based jobs are primarily in office-based industries. Even manufacturing jobs, which would generally

locate in industrial or warehouse space, are in office-based industries like publishing and high technology. The market for office space is tracked extensively by real estate brokers, and is used in the following sections as a proxy for TOD-based employment growth patterns. Quarterly office market reports identify various submarket areas that are generally easily identifiable as transit-oriented (e.g. “Downtown Walnut Creek”) or not (e.g. “Shadelands Business Park”).

Comparison of Projections. **Table 2** compares the ABAG Projections with the CTOD Demand estimate for potential TOD-based jobs in the areas surrounding transit lines, or the Transit Planning Areas (TPAs). The CTOD estimate varies on a county-by-county basis when compared with *Projections 2003* and the Smart Growth Vision. *Projections 2003* expected that counties with regionally significant employment centers, such as Alameda, San Francisco, and Santa Clara, will have transit-based employment in excess of the potential demand for TOD. This is reasonable given that these large employment centers will attract jobs beyond those perceiving transit as an amenity. The CTOD potential demand projects that the demand for transit oriented employment in other counties with less regionally significant employment centers will exceed *Projections 2003*.

Although the Smart Growth Vision assumes that cities and counties will adopt a more aggressive set of infill and density policies than assumed in *Projections 2003*, the Smart Growth Vision share of employment near transit is lower than *Projections 2003* for most counties. In the cases where the Smart Growth Vision exceeds *Projections 2003* expectations for TOD, the difference is only marginal. The Smart Growth Vision emphasizes residential infill development more than employment infill development, possibly because housing growth is a more obvious form of sprawl in the Bay Area. However, an equal emphasis on employment near transit and in infill areas – such as that assumed in *Projections 2003* – is more likely to make housing near transit a viable alternative for many of the region’s commuters, than would the addition of housing alone.

Table 2: Comparison of Current and Projected Share of Employment Near Transit, 2000 and 2030

County	Jobs/Share of Jobs in Transit Planning Areas, 2000	Transit Planning Area Job Projections, 2030			Total ABAG Projections 2003 2030
		<i>Projections 2003</i>	<i>Smart Growth Vision</i>	<i>CTOD Potential Demand Estimate</i>	
Alameda	326,000	518,000	549,000	447,000	1,087,000
<i>South Alameda</i>	<i>114,000</i>	<i>205,000</i>	<i>229,000</i>	<i>107,000</i>	<i>657,000</i>
<i>North Alameda</i>	<i>212,000</i>	<i>313,000</i>	<i>320,000</i>	<i>340,000</i>	<i>431,000</i>
Contra Costa	94,000	148,000	123,000	188,000	536,000
Marin	36,000	55,000	38,000	65,000	164,000
Napa	9,000	12,000	14,000	29,000	89,000
San Francisco	476,000	675,000	601,000	612,000	816,000
San Mateo	132,000	225,000	193,000	234,000	527,000
Santa Clara	368,000	630,000	497,000	590,000	1,482,000
Solano	14,000	31,000	53,000	53,000	205,000
Sonoma	17,000	37,000	43,000	101,000	321,000
Region	1,471,000	2,331,000	2,111,000	2,318,000	5,226,000

Source: Association of Bay Area Governments, Center for Transit Oriented Development, Strategic Economics. Numbers shown in jobs, and may not add due to rounding.

Implications for Transit Oriented Development. Counties without highly developed multimodal transit systems are expected to experience job growth in industries that currently have a strong tendency to locate

near transit systems. Growth in transit-oriented industries will create a demand for transit-oriented employment development that is often greater than the anticipated supply of land available for employment.

The CTOD demand estimate generally exceeds the projected capacity for employment near transit in Smart Growth Vision, and falls short of *Projections 2003* in areas where employment of all types would gravitate naturally. Although the market for office space in particular is currently saturated, counties anticipating new stations and transit growth over the next 25 years should plan for ABAG's projected office and retail-based employment growth near transit in *Projections 2003*, as there will be market demand for TOD serving these uses.

The detailed county data provides insight into the types of employers that would consider locating near transit, and the reasons for excess or deficient potential demand when comparing ABAG and CTOD estimates for the TPA's. The following sections compare the details of projections for each county.

ALAMEDA COUNTY

This chapter describes the current economic context of Alameda County, and compares the ABAG Smart Growth Vision and *Projections 2003* employment forecasts to the CTOD demand estimate. Due to the vast differences in commuting patterns and transit availability from northern to southern Alameda County – and from northern Alameda to most of the Bay Area – this analysis compares north and south Alameda County separately. Moreover, since north Alameda County residents also walk and bike to work more frequently than the majority of the region, the demand estimate for this sub-county area includes both fixed-guideway transit and all other non-vehicular modes to work.

Market and Spatial Context

Current Distribution of Jobs and Access to Transit

There are three major transit systems, three transit corridors, and eight uniquely identified employment centers within Alameda County (**Figure 2- Appendix B**). While BART and AC Transit serve all cities along the Interstate 880 corridor, the four employment centers to the south of Berkeley and Oakland are largely industrial and not particularly accessible to transit stations. The low employment density that characterizes most industrial employment makes these areas unlikely candidates for future TOD employment growth.

An extensive transit system and higher densities in northern Alameda County provide commuters with a greater variety of transit options, including walking and biking. The City of Alameda has the highest share of residents driving to work compared with all northern Alameda County cities (75 percent) but even this is significantly less than the share of residents driving to work in Hayward (86 percent), southern Alameda County's most transit-friendly community. A full 13 percent of all residents in Berkeley walk to work, and 5 percent commute via bicycle. Another unique trait of Alameda County is the proliferation of transit-oriented government jobs in Oakland and Berkeley. Nearly ten percent of Alameda's jobs in 2000 were in the Government sector, compared with the Bay Area average of 7.8 percent.

Commercial Real Estate Market

Commercial real estate analysts divide the Alameda market into two segments: the Interstate 80/880 Corridor and the Tri-Valley Area, which is a subset of the Interstate 680 Corridor.³ The I-880 office market stretches from Richmond in Contra Costa County, south to San Leandro. There are approximately 28 million square feet of net leasable office space throughout the market, the bulk of which is concentrated in Oakland's Central Business District (CBD). The Oakland CBD is home to approximately 11.6 million square feet, or over 40 percent of the total market space, while the rest of Oakland including the Airport includes approximately 3.7 million square feet. While the asking rate for Class A space in the Oakland CBD is the highest throughout the market, Downtown Berkeley's 1.4 million square feet have higher average rents overall than the CBD. San Leandro has the lowest vacancy rates of all of the markets at 10.5 percent, and Downtown Berkeley is next at 13.1 percent. Richmond lags behind the rest of the corridor; though it has the same net square feet as Downtown Berkeley, its vacancy rate exceeds 35 percent and its asking rents are the lowest in the corridor.

The Dublin, Pleasanton, and Livermore area makes up most of the Tri-Valley real estate market. In this area there are approximately 15.1 million square feet of net leasable office space, 11 million of which is

³ Information in this section was gathered from CB Richard Ellis, "Oakland-East Bay Office MarketView, 1Q 2004."

concentrated in the Pleasanton area. Rents in these areas are the lowest and vacancy rates are the highest of any submarket area along the I-680 corridor, indicating that Contra Costa County's employment centers might be more desirable for businesses looking to locate along I-680.

Forecast Analysis for TOD-Based Employment

Expected Employment Growth

Employment in Alameda County is heavily concentrated in the Services sector. More than 35 percent of all jobs in the County are in Services, and more than a quarter of the Service jobs are in Business Services. Alameda County has a lower than average share of business services jobs in its Service sector compared with the region, but over time these business service jobs are expected to remain at a steady 29 percent, while this sector's share of employment declines in other parts of the region.

Employment is expected to grow significantly faster in the south than in the north, increasing this area's share of total county employment from 54 percent to 60 percent between 2005 and 2030. Employment in south Alameda is expected to grow at a faster rate than north Alameda in every sector. Even the services sector – North Alameda's dominant employer making up 43 percent of its jobs in 2000 – will become more concentrated in South Alameda over time, increasing by 60 percent compared with 31 percent in the North.

Forecasts for Transit-Oriented Employment

Table 3: Transit-Oriented Employment Projections, Alameda County, 2000 and 2030

County	Jobs/Share of Jobs in Transit Planning Areas, 2000	Transit Planning Area Job Projections, 2030			Total ABAG Projections 2003 2030
		<i>Projections 2003</i>	<i>Smart Growth Vision</i>	<i>CTOD Potential Demand Estimate</i>	
Alameda	326,000	518,000	549,000	447,000	1,087,000
<i>South Alameda</i>	<i>114,000</i>	<i>205,000</i>	<i>229,000</i>	<i>107,000</i>	<i>657,000</i>
<i>North Alameda</i>	<i>212,000</i>	<i>313,000</i>	<i>320,000</i>	<i>340,000</i>	<i>431,000</i>
Percent total employment	43%	48%	51%	41%	

Sources: ABAG, CTOD, Strategic Economics

ABAG's anticipated proliferation of jobs in South Alameda, where transit infrastructure is immature and regional connectivity is relatively low, has implications for the projected share of jobs near transit in the county by 2030. While *Projections 2003* estimates a higher share of employment near transit than the Smart Growth Vision for most Bay Area counties, it shows only modest increases in the share of jobs locating near transit in Alameda County. Despite its generally low employment projections in the transit planning areas throughout the region, the Smart Growth Vision shows a more significant increase in Alameda.

Although the absolute number of transit-oriented employment demand increases in north Alameda, the CTOD demand estimate shows that the share of jobs with a tendency to locate near transit will decline in Alameda County overall from 2000 to 2030.⁴ Moreover, CTOD projects a significantly lower share of employment near transit than either of the ABAG projections overall.

There are several reasons that the CTOD demand estimate is low in Alameda, while most other counties show much higher demand than ABAG projects. The most notable reason is that those industries that are expected to grow in south Alameda County do not tend to locate near transit. **Table 4** compares county and subcounty employment projections by sector for ABAG and the TOD demand estimate. The industries that would most likely have a demand for space near transit, such as Finance, Insurance, and Real Estate, make up only a small portion of the total employment in Alameda county. Meanwhile, industries with a small demand for transit, such as the Retail Trade sector, Transportation, Communications, and Utilities, or Manufacturing, make up a large share of Alameda's economy but only incrementally add to the potential demand for TOD. The Manufacturing sector, for example, is dominated by production of non-electronic durable goods, but the few industries in this sector with a demand for transit-oriented space are in the non-durable goods subsector. Among others, these include printing and publishing, and apparel and other textile products.

The low demand estimate is also reasonable because the Smart Growth Vision, and to a lesser extent *Projections 2003*, assume that transit planning areas in south Alameda will develop employment centers that do not currently exist. There is currently only one transit-oriented employment center in south Alameda: Hacienda Business Park/Downtown Pleasanton, denoted in **Figure 2** as the Pleasanton Employment Center. While the ABAG projections might be feasible if employment growth were concentrated at this location, the projections do not make this assumption. While the Pleasanton Employment Center captured 30 percent of the employment in south Alameda transit planning areas in 2000, the Smart Growth Vision projects that this area will only capture 18 percent in 2030, and *Projections 2003* projects that Pleasanton will retain a fairly constant share of transit-oriented employment over time.

Overall, *Projections 2003* jobs estimates for the Transit Planning Areas is reasonable, particularly since Alameda county contains one of the region's largest employment centers, and will continue to attract job growth near transit even among industries that do not perceive transit to be a major amenity. The Smart Growth Vision employment estimate for the transit areas may be unachievable, as it assumes new transit-based employment centers will develop in south Alameda County.

⁴ The CTOD demand estimate has been separately calculated for North and South Alameda to account for extreme differences in transit service and regional connectivity. South Alameda demand estimates reflect the regional methodology described earlier, while a similar methodology was revised to capture specific industry trends in North Alameda, and was expanded to include residents who walk and bike to work. Because many employment projections are only available on the County level, the resulting demand estimates were calculated at the County level and reapplied to South and North Alameda using their respective 2000 shares of employment near transit.

Table 4: Share of Alameda County Jobs with Demand for TOD, 2030

	ABAG Alameda County Projections 2003 for 2030	CTOD South Alameda County Transit-Oriented Employment	CTOD North Alameda County Transit-Oriented Employment	CTOD Total Alameda County Transit-Oriented Employment	Share County Employment with Potential Demand for TOD
Total Jobs	1,087,400	106,900	339,800	446,700	41%
Agriculture, Mining	3,500	0	0	0	0%
Construction	50,200	0	0	0	0%
Manufacturing / Wholesale	147,400	18,200	59,900	63,300	43%
Transp., Comm., Utilities	71,800	2,200	10,800	18,800	26%
Retail Trade	165,300	8,000	31,000	55,700	34%
F.I.R.E	52,700	14,100	22,200	48,200	91%
Services	416,300	64,300	187,100	313,700	75%
Government	104,900	N/A	28,800	N/A	N/A

Source: ABAG, CTOD, Strategic Economics. Numbers may not add due to rounding

CONTRA COSTA COUNTY

This chapter describes the current economic context of Contra Costa County, and compares the ABAG Smart Growth Vision and *Projections 2003* employment forecasts to the CTOD forecast.

Market and Spatial Context

Current Distribution of Jobs and Access to Transit

Most employment in Contra Costa County is near I-680 in Concord and Walnut Creek, and the “Lamorinda” area along Highway 24. These areas are fairly accessible to existing transit systems. The I-680 corridor continues into southern portions of the county with concentrated employment in Danville and San Ramon. These employment centers are not highly accessible to public transportation and are generally reached by automobile. **Figure 3** provides a further description of the employment centers.

Commercial Real Estate Market

There are approximately 15.7 million square feet of office space in the I-680 corridor. Over half of the 7.7 million square feet of Class A office space is located in Walnut Creek’s transit-accessible employment centers: Downtown Walnut Creek and the Pleasant Hill BART station. Walnut Creek’s Shadelands Business Park has the third greatest clustered volume of office space in the County at 1.9 million square feet, the bulk of which is Class B and Class C space. Shadelands has very low prospects for future regional connectivity and is only minimally served by Contra Costa County’s bus system.

Concord has over 4.5 million square feet of office space, about 30 percent of the total office space in the County. While BART serves much of this office space, real estate analysts do not distinguish BART-accessible space from the inventory with limited access to transit.

Most recently, Concord has been attracting new leasing activity, while Downtown Walnut Creek and Walnut Creek Pleasant Hill BART have been experiencing increased vacancy rates. Analysts suspect that tenants are moving from higher rent, Class A space in Walnut Creek into cheaper, Class B space in Concord. These recent trends do not directly affect the forecasts described in the following section given the lengthy timeline of these forecasts.⁵

Forecast Analysis for TOD-Based Employment

Expected Employment Growth

According to ABAG’s *Projections 2003*, the number of jobs in Contra Costa County is expected to increase at a significantly faster rate than the region as a whole between 2005 and 2030. Most of this growth will occur in the retail and services sectors. Employment in the retail sector is expected to increase by nearly 50 percent over the 25-year period, relative to a 37 percent increase across the region. Likewise, employment in the Services sector is expected to increase by nearly 60 percent compared with 42 percent for the region. While employment in the business services subsector will increase by 44 percent region-wide, this subsector in Contra Costa is expected to increase its jobs by nearly 80 percent. By 2030, Contra Costa County is expected to add over 150,000 jobs, reaching 536,000 total jobs.

⁵ Source of real estate data: Colliers Parrish, *Second Quarter Office Market Report*. Available online at www.colliersparrish.com.

Forecasts for Transit-Oriented Employment

The projected demand for TOD in Contra Costa County is significantly higher than the estimated capacity for employment growth near transit. **Table 5** shows that Contra Costa County had nearly 94,000 jobs in its TPA's in 2000, and that *Projections 2003* expects concentrated growth near transit with an overall increase of 58 percent. The Smart Growth Vision, however, anticipates slower job growth in the TPA's than in the region overall, adding only 31 percent between 2000 and 2030.

Table 5: Transit-Oriented Employment Projections, Contra Costa County, 2000 and 2030

County	Jobs/Share of Jobs in Transit Planning Areas, 2000	Transit Planning Area Job Projections, 2030			Total ABAG Projections 2003 2030
		<i>Projections 2003</i>	<i>Smart Growth Vision</i>	<i>CTOD Potential Demand Estimate</i>	
Contra Costa	94,000	148,000	123,000	188,000	536,000
Percent total employment	26%	28%	23%	35%	

Source: ABAG, CTOD, Strategic Economics. Numbers rounded to nearest 1,000.

Demand for TOD is much higher than the projected employment in the TPA's, for both *Projections 2003* and the Smart Growth Vision. Potential demand for TOD is high because Contra Costa County is expected to experience the most growth in industries that have a tendency to locate near transit, as shown in **Table 6**, below.

Table 6: Share of Contra Costa County Jobs with Demand for TOD, 2005 and 2030

	ABAG Contra Costa County Projections		CTOD Potential Demand Estimate		Share of All Jobs	
	2005	2030	2005	2030	2005	2030
Total Jobs	361,110	536,410	130,870	188,230	36%	35%
Agriculture, Mining	3,590	3,510	0	0	0	0
Construction	23,560	33,360	0	0	0%	0%
Manufacturing	33,290	45,170	8,160	11,910	25%	26%
Transp., Comm., Utilities	22,670	32,100	1,940	2,750	9%	9%
Wholesale Trade	12,380	17,000	3,130	4,520	25%	27%
Retail Trade	65,740	98,430	12,260	16,820	19%	17%
F.I.R.E	33,040	46,780	29,820	42,680	90%	91%
Services	139,230	220,950	75,560	109,560	54%	50%
<i>Business Services</i>	44,610	79,580	32,300	46,230	72%	58%
Government	27,610	39,110	N/A	N/A	N/A	N/A

Source: ABAG, CTOD, Strategic Economics. Numbers may not add due to rounding.

The strong demand for transit-oriented employment centers is reflected in Contra Costa's commercial real estate market analyses as well; there is a rent premium on office space in BART accessible locations such as Downtown Walnut Creek and the Pleasant Hill Station area.

MARIN COUNTY

Market and Spatial Context

Current Distribution of Jobs and Access to Transit

Figure 4 shows small concentrations of employment throughout eastern Marin County, primarily surrounding Highway 101. The largest concentration of employment is in San Rafael, which with 44,000 jobs in 2000 represented 36 percent of all employment in the County. Other major employment areas include Larkspur (12,700 jobs) and Novato (26,500 jobs).⁶

San Rafael is the only employment center with regional significance in Marin County, meaning its employment densities and consecutive areas of employment rank among the top 31 in the Bay Area. Currently, its regional connectivity via public transit is limited to the infrequent Golden Gate buses running from San Francisco via Highway 101; Larkspur is a more regionally connected employment center as a major dock for the ferry systems. However, the proposed SMART rail lines would connect San Rafael to points north, and would serve the Novato employment center as well, thereby increasing the connectivity in the area and creating some of Marin's first opportunities for transit-oriented employment.

Commercial Real Estate Market

The Marin office market consists of 8.7 million square feet of space in three subareas: Northern, Central, and Southern Marin.⁷ Northern Marin, which includes Novato and San Rafael, has a total office inventory of around 6.5 million. Central Marin has a total of 1.2 million square feet of office space, primarily in Larkspur. The only areas with planned new office development are Novato and San Rafael; these are likely build-to-suit buildings, since Novato's vacancy rate well exceeds 20 percent, and San Rafael has a vacancy rate of 17 percent. Corte Madera and Mill Valley have the lowest vacancy rates in the County at 5.8 percent and 11.4 percent, respectively.

Forecast Analysis for TOD-Based Employment

Expected Employment Growth

Marin is expected to experience slower employment growth than the region, increasing its employment base by 33 percent versus the region's 39 percent growth. Unlike most other counties in the region, Marin will not experience significantly faster growth in the retail and services sectors. Likewise, because Marin is not expected to capture significant population growth over the next 25 years, the construction industry is expected to experience slow growth. The Manufacturing and wholesale trade sectors are expected to grow at a faster pace than the region, but only comprise a small share of total employment in the county.

⁶ Source: ABAG, *Projections 2003*. Numbers are from 2000 and have been rounded to the nearest hundred.

⁷ Sources: Keegan & Coppin, Inc., "Total Existing Office Vacancy Estimates, First Quarter 2004, Marin County." BT Commercial, "Office Report, Marin County, First Quarter 2004."

Forecasts for Transit-Oriented Employment

Table 7: Transit-Oriented Employment Projections, Marin County, 2000 and 2030

County	Jobs/Share of Jobs in Transit Planning Areas, 2000	Transit Planning Area Job Projections, 2030			Total ABAG Projections 2003 2030
		Projections 2003	Smart Growth Vision	CTOD Potential Demand Estimate	
Marin	36,000	55,000	38,000	65,000	164,000
Percent total employment	29%	34%	23%	40%	

Source: ABAG, CTOD, Strategic Economics

Given that Marin has not yet started construction on its fixed guideway line, the TPAs surrounding proposed SMART stations capture a surprisingly high share of the total employment in the County. Projections 2003 and the Smart Growth Vision do not anticipate a significant increase in the share of employment near transit as a result of the introduction of the SMART line. Projections 2003 only expects a four point increase in the share of jobs near transit, while the Smart Growth Vision actually expects a decline in its share of jobs.

In fact, the demand for employment near transit is estimated much higher than ABAG's projected capture rates, at 40 percent of all employment. As **Table 8** shows, the bulk of the potential TOD employment growth is in the Services sector; while only 55 percent of employment in this sector has a potential demand for TOD, it is by far the largest sector Marin's economy in terms of employment. Slightly over half of the employment in this sector is in the Business Services and Engineering and Management subsectors, combined.

Table 8: Share of Marin County Jobs with Demand for TOD, 2005 and 2030

	ABAG Marin County Projections		CTOD Potential Demand Estimate		Share of All Jobs	
	2005	2030	2005	2030	2005	2030
Total Jobs	125,290	163,980	48,690	65,236	39%	40%
Agriculture, Mining	740	760	0	0	0%	0%
Construction	6,830	8,410	0	0	0%	0%
Manufacturing	5,180	7,410	1,510	2,420	29%	33%
Transp., Comm., Utilities	4,800	6,510	640	790	13%	12%
Wholesale Trade	4,650	6,230	1,030	1,480	22%	24%
Retail Trade	26,650	32,360	5110	6750	19%	21%
F.I.R.E	11,560	15,650	9,350	12,800	81%	82%
Services	57,020	75,170	31,040	41,000	54%	55%
Business Services	16,860	22,340	11,360	14,060	67%	63%
Government	7,860	11,480	N/A	N/A	N/A	N/A

Source: ABAG, CTOD, Strategic Economics. Numbers may not add due to rounding.

NAPA COUNTY

Market and Spatial Context

Current Distribution of Jobs and Access to Transit

While the agricultural nature of Napa's economy does not lend itself to concentrated employment growth, there are a few small, scattered areas with concentrated employment along California Highway 29. The City of Napa is by far the largest area of concentrated employment in the County with nearly half of all County jobs, at 31,000. Over 17,000 jobs in the County are scattered across unincorporated areas; employment is likely scattered because of the prevalence of food production firms and wineries.

VINE, the County's bus system, links up with the Vallejo ferry and a series of community shuttles to provide service along Highway 29 and in its towns. The ferry connection enables Napa residents to reach San Francisco via transit, and vice versa. There are no plans to extend service in this county through Resolution 3434.

Commercial Real Estate Market

Napa County has a total of 1.8 million square feet of office space, primarily along Highway 29. Much of this office space is scattered throughout unincorporated areas of the county, in transit-inaccessible office parks.

Forecast Analysis for TOD-Based Employment

Expected Employment Growth

Employment in Napa County is heavily concentrated in the Manufacturing and Services sectors. More than 15 percent of all jobs in the County are in Manufacturing, and more than 20 percent of the Manufacturing jobs are in High Technology. The share of High Technology jobs in the Manufacturing Sector specifically will increase to 32 percent by 2030. More than 36 percent of all jobs in the county are in Services, and the share of Service jobs in Business Services will increase significantly from 9 percent in 2000 to over 22 percent in 2030.

Napa is expected to experience slightly lower employment growth overall than the region as a whole, increasing total jobs by 33 percent between 2000 and 2030, versus 39 percent for the region. Unlike most other counties in the region, Napa is not expected to experience significantly faster growth in the retail sector. Napa is also not expected to capture significant population growth over the next 25 years, so the construction industry is expected to grow at a slower pace. Every sector is expected to experience some employment growth, even if it occurs at a decelerating pace.

The High Technology Manufacturing and Business Services will all experience concentrated growth in Napa relative to the rest of the region. The Wholesale Trade sector will grow at approximately the same rate as the region. The major industry in Napa is manufacturing and selling wine. These industries tend to have low employment densities and large-scale land uses that they are not amenable to transit-oriented areas.

Forecasts for Transit-Oriented Employment

Table 9: Transit-Oriented Employment Projections, Napa County, 2000 and 2030

County	Jobs/Share of Jobs in Transit Planning Areas, 2000	Transit Planning Area Job Projections, 2030			Total ABAG Projections 2003 2030
		<i>Projections 2003</i>	<i>Smart Growth Vision</i>	<i>CTOD Potential Demand Estimate</i>	
Napa	9,000	12,000	14,000	29,000	89,000
Percent total employment	13%	13%	16%	33%	

Source: ABAG, CTOD, Strategic Economics

Its rural nature and low frequency transit give Napa County the second lowest share of transit-oriented employment in the Bay Area. Neither *Projections 2003* nor the Smart Growth Vision anticipate a significant increase in this capture rate over the next 30 years, which is likely in part because there are few proposed improvements to Napa's transit system. Its agricultural economy requires employment to be scattered throughout the county rather than concentrated in a few employment centers, and past real estate development have created a scattered employment pattern with no major employment center.

Despite the low projected employment growth in the TPA's, the TOD demand estimate projects that the region has the potential to capture up to 33 percent of its employment in areas surrounding fixed-guideway transit. This is due to growth in several industries within the Services sector that tend to locate near transit on a region-wide basis, as **Table 10** shows. Although its lack of a fixed-guideway system might be a disincentive for these jobs to concentrate near transit in Napa, the strong demand for employment space near transit could lead to more concentrated employment growth within the few incorporated areas of the County.

Table 10: Share of Napa County Jobs with Demand for TOD, 2005 and 2030

	ABAG Napa County Projections		Jobs with Strong Demand for TOD		Share of All Jobs	
	2005	2030	2005	2030	2005	2030
Total Jobs	72,250	88,990	21,227	29,460	29%	33%
Agriculture, Mining	5,600	6,030	0	0	0%	0%
Construction	4,690	5,470	0	0	0%	0%
Manufacturing	10,890	14,870	3,680	5,020	34%	34%
Transp., Comm., Utilities	2,460	2,870	150	190	6%	7%
Wholesale Trade	2,790	3,560	420	580	15%	16%
Retail Trade	12,760	14,650	1,960	2,710	15%	19%
F.I.R.E	2,800	3,260	2,390	3,230	85%	99%
Services	26,630	34,040	12,640	17,730	47%	52%
Government	3,630	4,240	N/A	N/A	N/A	N/A

Source: ABAG, CTOD, Strategic Economics. Numbers may not add due to rounding.

The Services sector makes up the greatest share of employment with a potential demand for transit-oriented locations. Most of the employment in this sector is evenly split between hotel and accommodations services, and business services. The Manufacturing sector has the next largest share of jobs with a demand for transit. The jobs represented in this sector are concentrated in the Food and Kindred Products industry, which has only a low potential demand for transit. The methodology assumes that only a quarter of the jobs in this industry would be capturable near transit. For more information on this methodology, please refer to the appendix of this report.

SAN FRANCISCO COUNTY

Market and Spatial Context

Current Distribution of Jobs and Access to Transit

The convergence of multiple modes of transit from multiple parts of the region makes downtown San Francisco the most regionally connected employment center in the Bay Area, and guarantees its future as the major job center in the County and region. A full 70 percent of all jobs in the city are in the downtown area. Employment in the retail and services sectors is more scattered throughout the city than employment in other sectors; only 60 percent of retail and service jobs are downtown, while more than 80 percent of the jobs in other sectors are located downtown.

Commercial Real Estate

Commercial real estate brokers identify the Central Business District (CBD) as the sole major area for office space in the City of San Francisco. Within the CBD, brokers differentiate between the financial district, and the “non-financial district.” The total square feet of office space in the CBD has been estimated anywhere between 79 million and 84 million; over half of this space is located in the financial district which spreads to both the north and south of Market Street. According to brokerage reports, San Francisco has become the “low cost alternative” to other major office markets in the Bay Area, particularly those along the 101 South Corridor. While rents in San Francisco average around \$2.10 per square foot, rents in Palo Alto are approximately one dollar higher, and the 101 South Corridor as a whole averages \$2.77.⁸

Forecast Analysis for TOD-Based Employment

Expected Employment Growth

San Francisco is expected to experience slower employment growth than the region, increasing its employment base by 29 percent, relative to the regional 39 percent growth rate between 2000 and 2030.

Following regional trends, employment in San Francisco is heavily concentrated in the Services sector. More than 44 percent of all jobs in the County are in Services, and around 30 percent of the Service jobs are in Businesses services. The share of Service jobs in Business Services will stay steady at 30 percent. The Retail sector will experience the largest growth in San Francisco with an additional 31,800 jobs between 2000 and 2030 or 34 percent increase.

Agriculture and Mining is the only industry that will decrease in San Francisco from 700 jobs in 2000 to 650 jobs in 2030. The population is expected to increase at about the same rate as the Construction industry. San Francisco will experience a small increase in the number of manufacturing jobs in the County of 15 percent.

⁸ Source: BT Commercial, “Office Report, First Quarter 2004.”

Forecasts for Transit-Oriented Employment

Table 11: Transit-Oriented Employment Projections, San Francisco County, 2000 and 2030

County	Jobs/Share of Jobs in Transit Planning Areas, 2000	Transit Planning Area Job Projections, 2030			Total ABAG Projections 2003 2030
		Projections 2003	Smart Growth Vision	CTOD Potential Demand Estimate	
San Francisco	476,000	675,000	601,000	612,000	816,000
Percent total employment	75%	83%	74%	75%	

Source: ABAG, CTOD, Strategic Economics

Figure 6 shows that the transit system in San Francisco is so extensive that the Transit Planning areas include most of the commercial corridors in the city. Regardless, employment remains concentrated in the downtown,⁹ and TPA's in other areas only contribute an additional 5 percent of all jobs in the city.

ABAG's projections show that the San Francisco TPA's will retain, and possibly exceed, their 75 percent capture rate for all employment in the County. The Smart Growth Vision expects a slight decrease, possibly because this projection appears to emphasize housing rather than employment in infill areas. As with Alameda County, San Francisco's extensive public transit system provides residents with many commuting opportunities beyond fixed-guideway transit or driving.

The CTOD demand methodology does not accurately project the total demand for employment near transit in San Francisco, because the extensive transit ridership of its commuters cannot be accounted for¹⁰. This analysis therefore assumes that the transit planning areas would retain its current, 75 percent share of county employment.

Table 12: San Francisco County Job Growth by Sector, 2005 to 2030

	ABAG San Francisco County Projections		Percent Growth, 2005 to 2030
	2005	2030	
Total Jobs	635,480	815,680	28%
Agriculture, Mining	700	650	-7%
Construction	22,750	28,470	25%
Manufacturing	30,220	35,150	16%
Transp., Comm., Utilities	42,300	51,830	23%
Wholesale Trade	22,970	27,610	20%
Retail Trade	93,730	126,250	35%
F.I.R.E	75,550	92,290	22%
Services	281,150	372,680	33%
<i>Business Services</i>	83,560	110,760	33%
Government	66,110	80,750	22%

Source: ABAG Projections 2003

⁹ Highway 101 denotes the western border of the "downtown" area for this report.

¹⁰ For more on this see Appendix A of this report.

The intense concentration of employment and transit in downtown San Francisco makes it highly likely that the transit planning areas will continue to capture at least 75 percent of the city's employment, if not more. In fact, it is likely that the share of employment in the transit areas could increase to the 83 percent estimated by *Projections 2003* for 2030, particularly since county job growth is expected to occur in sectors that are amenable to transit-oriented locations (**Table 12**). While in most counties in the Bay Area, retail employment is not considered as a sector with strong demand for locating near transit, most of the retail areas in San Francisco are well served by its transit systems and would thus have a demand for transit. Sectors that would not have a strong demand for transit-oriented locations, such as manufacturing, wholesale trade, and transportation, communications, and utilities, are expected to grow at a slower than average rate for the county and will make up a smaller share of all county jobs by 2030.

SAN MATEO COUNTY

Market and Spatial Context

Current Distribution of Jobs and Access to Transit

Employment in San Mateo County lines the Highway 101 and I-280 Corridors, and is concentrated in six major employment centers. While these employment centers follow Highway 101 in particular and, consequently, are located along the Caltrain route, most of the employment in these centers is not concentrated around the station stops in any transit-oriented way. The SFO employment center is primarily industrial and warehouse space, which is not amenable to commuting by transit given its low employment density. Other employment centers in the County are in industries that are more amenable to transit, but jobs are located in office parks that are designed for automobiles.

Both San Mateo and Santa Clara Counties, however, have many businesses that are supportive of transit even though they are not located near a station or stop. The Environmental Protection Agency has identified seven major companies in the region as being in the top 20 Fortune 500 companies that are the best workplaces for commuters. Among these were Oracle (Redwood City) and Hewlett-Packard (Palo Alto). These companies offer such incentives as shuttles from transit stations, commuter checks, and subsidized vanpools.¹¹ Therefore while the high technology industry is not among the highest industries with a demand for transit, they do fall in the category with a moderate demand for transit, and their efforts incorporate them into the demand estimate discussed in following sections.

Commercial Real Estate

Along the Highway 101 Corridor, rents and vacancy rates vary considerably, but as with the rest of the region there is no overall shortage of office space. The lowest vacancy rate is in Daly City, at 14.1 percent, while the highest is in Redwood City at 46.8 percent. While vacancy rates are high overall, there is still a strong demand for Class A office space and a lack of space available.

An estimated 48 percent of office space in San Mateo is located in the central part of the County, while 41 percent of all office space in San Mateo County is located in the City of San Mateo. However, the highest rents are grossed on in San Mateo, but in Foster City and Menlo Park.¹²

Forecast Analysis for TOD-Based Employment

Expected Employment Growth

The number of jobs in San Mateo County is expected to grow by 33 percent versus 39 percent for the region as a whole. The Government, F.I.R.E and Retail sector will all experience concentrated job growth in San Mateo County relative to the rest of the region. The F.I.R.E sector will grow at approximately the same rate as the region.

More than 40 percent of all jobs in the county are in Services, and more than 32 percent of the Service jobs are in Business Services. The share of Service jobs in Business services specifically will remain steady over time at 32 percent. 16 percent of all jobs in the county are in the Retail sector and are expected to increase by nearly 41 percent between 2000 and 2005.

¹¹ Sarkar, Pia, "Sparing the Air Brings Recognition: Bay Area Companies Rank Among EPA's Best for Commuters," *San Francisco Chronicle*. September 29, 2004. Accessed on www.sfgate.com.

¹² CB Richard Ellis, "Bay Area Market Summary, First Quarter 2004."

Forecasts for Transit-Oriented Employment

Table 13: Transit-Oriented Employment Projections, San Mateo County, 2000 and 2030

County	Jobs/Share of Jobs in Transit Planning Areas, 2000	Transit Planning Area Job Projections, 2030			Total ABAG Projections 2003 2030
		<i>Projections 2003</i>	<i>Smart Growth Vision</i>	<i>CTOD Potential Demand Estimate</i>	
San Mateo	132,000	225,000	193,000	234,000	527,000
Percent total employment	33%	43%	37%	44%	

Source: ABAG, CTOD, Strategic Economics

Both *Projections 2003* and the Smart Growth Vision anticipate a greater share of employment in the TPA's than currently exists; again, the Smart Growth Vision anticipates a smaller share of employment in these areas than *Projections 2003*. The *Projections 2003* estimate is consistent with the TOD Demand estimate; both project that the areas surrounding transit could accommodate a much greater share of the County's employment than they currently do.

Table 14: Share of San Mateo County Jobs with Demand for TOD, 2005 and 2030

	ABAG San Mateo County Projections		Jobs with Strong Demand for TOD		Share of All Jobs	
	2005	2030	2005	2030	2005	2030
Total Jobs	395,890	526,600	168,910	233,640	43%	44%
Agriculture, Mining	3,490	3,490	0	0	0%	0%
Construction	16,550	21,700	0	0	0%	0%
Manufacturing	37,760	49,650	10,950	15,080	29%	30%
Transp., Comm., Utilities	45,080	59,130	5,100	6,460	11%	11%
Wholesale Trade	21,070	27,590	4,890	5,920	23%	21%
Retail Trade	63,400	89,970	12,990	17,200	20%	19%
F.I.R.E	32,030	42,020	22,680	29,860	71%	71%
Services	157,770	207,500	112,290	159,130	71%	77%
Government	19,480	25,550	N/A	N/A	N/A	N/A

Source: ABAG, CTOD, Strategic Economics. Numbers may not add due to rounding.

Table 14 shows the sectoral breakdown of the demand estimate. Although high technology industries only have a moderate tendency to locate near transit, the TOD demand estimate projects that over 10,000 of these jobs will have a potential demand for locating near transit. High technology industries, including Electronic Equipment, Industrial Machinery, and Instruments and Related Products, will make up most of this demand. In addition, employment with a demand for transit is heavily concentrated in the Services industry; most of this employment will be in the Business Services and Engineering and Management subsectors.

SANTA CLARA COUNTY

Market and Spatial Context

Current Distribution of Jobs and Access to Transit

Employment in Santa Clara County is concentrated in the San Jose area, but there are several employment centers in surrounding towns to the north and west that are also unique employment centers. Caltrain and San Jose's light rail system serves some of the employment in Santa Clara County's major employment centers, but the smaller employment centers vary with how well they are served by transit. Employment in Mountain View, for example, is concentrated away from the Caltrain station area.

Both San Mateo and Santa Clara Counties have many businesses that are supportive of transit even though they are not located near a station or stop. The Environmental Protection Agency has identified seven major companies in the region as being in the top 20 Fortune 500 companies that are the best workplaces for commuters. Among these were Oracle (Redwood City) and Hewlett-Packard (Palo Alto). These companies offer such incentives as shuttles from transit stations, commuter checks, and subsidized vanpools.¹³ Therefore while the high technology industry is not among the highest industries with a demand for transit, they do fall in the category with a moderate demand for transit, and their efforts incorporate them into the demand estimate discussed in following sections.

Commercial Real Estate

Employment is scattered throughout Santa Clara county, and is so extensive in San Jose that this city's market is split up into three or four separate market areas: Downtown San Jose, North San Jose, South San Jose, and San Jose Industrial Business Park/Milpitas. In addition, small towns from Palo Alto to Fremont are included as unique market areas.

The highest rents for office space are grossed in Palo Alto, followed by Cupertino. South San Jose, which has some of the lowest rents in the market, also has the lowest vacancy rate at 6.2 percent.

Forecast Analysis for TOD-Based Employment

Expected Employment Growth

The number of jobs in Santa Clara County is expected to increase significantly by nearly 36 percent between 2000 and 2030. More than 38 percent of the jobs are in Services, and more than 73 percent of the Service jobs are in Business Services. The share of service jobs in Business Services specifically will remain steady over time. The Construction, F.I.R.E, Government, Manufacturing, Transportation, Communications and Utilities sectors will all experience concentrated job growth in Santa Clara county relative to the rest of the region. The Wholesale Trade sector will grow at approximately the same rate as the region.

The Agriculture and Mining sector will experience a 2.5 percent decrease in jobs. The population is expanding by over 35 percent and the Construction sector will experience a job increase of 51 percent between 2000 and 2030. The share of High Technology jobs in the Manufacturing sector will remain steady over time at 40 percent.

¹³ Sarkar, Pia, "Sparing the Air Brings Recognition: Bay Area Companies Rank Among EPA's Best for Commuters," *San Francisco Chronicle*. September 29, 2004. Accessed on www.sfgate.com.

Forecasts for Transit-Oriented Employment

Table 15: Transit-Oriented Employment Projections, Santa Clara County, 2000 and 2030

County	Jobs/Share of Jobs in Transit Planning Areas, 2000	Transit Planning Area Job Projections, 2030			Total ABAG Projections 2003 2030
		<i>Projections 2003</i>	<i>Smart Growth Vision</i>	<i>CTOD Potential Demand Estimate</i>	
Santa Clara	368,000	630,000	497,000	590,000	1,482,000
Percent total employment	34%	43%	34%	40%	

Source: ABAG, CTOD, Strategic Economics

Santa Clara, Alameda, and San Francisco counties are the only areas where one of ABAG's employment projections for the transit planning areas exceeds the CTOD demand estimate; in this case, *Projections 2003* is marginally higher than the CTOD demand estimate. However, the employment estimates in *Projections 2003* are still feasible, particularly since the CTOD demand estimate uses a highly conservative methodology in its projections.

Table 16 shows that Santa Clara follows the regional trend where the services sector dominates the demand for TOD. Well over half of the jobs projected to have an interest in locating near transit are in Services. As with San Mateo County, the High Technology sector again plays a significant role, with an estimated 99,000 jobs in this sector showing a demand for TOD. While most jobs in the FIRE sector have a strong potential demand for transit, this sector is not a particularly large part of Santa Clara's economy.

Table 16: Share of Santa Clara County Jobs with Demand for TOD, 2005 and 2030

	ABAG Santa Clara County Projections		Jobs with Strong Demand for TOD		Share of All Jobs	
	2005	2030	2005	2030	2005	2030
Total Jobs	1,085,860	1,481,670	431,550	589,740	40%	40%
Agriculture, Mining	6,690	6,610	0	0	0%	0%
Construction	52,070	77,290	0	0	0%	0%
Manufacturing	265,530	367,500	75,580	99,130	28%	27%
Transp., Comm., Utilities	30,600	45,920	2,830	3,860	9%	8%
Wholesale Trade	60,460	85,300	13,450	17,220	22%	20%
Retail Trade	147,040	190,500	25,720	33,870	17%	18%
F.I.R.E	45,420	68,060	33,230	43,950	73%	65%
Services	420,170	553,940	280,750	391,720	67%	71%
Government	57,880	86,550	N/A	N/A	N/A	N/A

Source: ABAG, CTOD, Strategic Economics. Numbers may not add due to rounding.

SOLANO COUNTY

Market and Spatial Context

Current Distribution of Jobs and Access to Transit

Employment in Solano is clustered in communities along I-80, from Vallejo to Dixon. The County's major employment is at the Travis Air Force Base. Low frequency Amtrak trains serve the communities, and employment is generally not clustered around the stations.

Commercial Real Estate

Solano experienced rapid employment growth in the late 1990's due to its abundance of cheap, available land and excess demand in the rest of the Bay Area. While there is a significant amount of build-to-suit warehouse and industrial space currently being built, the office market is not experiencing the same growth. Rents for commercial space in Solano are approximately 25 percent less than rents for comparable space throughout the region, but the majority of this space is in scattered office parks rather than concentrated near the downtown or near the Amtrak stations. Benicia is the location for the largest share of office park space at around 7 million square feet, although Travis AFB is by far the County's largest employer.

Forecast Analysis for TOD-Based Employment

Expected Employment Growth

Employment growth in the County from 2000 to 2030 is expected to far outpace the region, experiencing a 66 percent increase compared with the region's 39 percent increase in jobs. The Services sector and Business Services subsector are expected to more than double their employment, to over 58,000 in 2030. Likewise, Retail Trade will increase by over 60 percent. Some of this growth is due to an anticipated surge in population. However, the apparent vast increase in the number of jobs is somewhat misleading, as the total jobs in Solano County small relative to other counties in the region. Nonetheless, an increase of over 81,000 jobs will have a major impact on the demand for employment-serving development.

Forecasts for Transit-Oriented Employment

Table 17: Transit-Oriented Employment Projections, Solano County, 2000 and 2030

County	Jobs/Share of Jobs in Transit Planning Areas, 2000	Transit Planning Area Job Projections, 2030			Total ABAG Projections 2003 2030
		<i>Projections 2003</i>	<i>Smart Growth Vision</i>	<i>CTOD Potential Demand Estimate</i>	
Solano	14,000	31,000	53,000	53,000	205,000
Percent total employment	11%	15%	26%	26%	

Source: ABAG, CTOD, Strategic Economics

Solano County is unique in that the Smart Growth Vision actually projects a larger share of employment in the transit planning areas than *Projections 2003*. The Smart Growth Vision expects the same amount of employment near transit as the CTOD potential demand estimate.

Table 18: Share of Solano County Jobs with Demand for TOD, 2005 and 2030

	ABAG Solano County Projections		Jobs with Strong Demand for TOD		Share of All Jobs	
	2005	2030	2005	2030	2005	2030
Total Jobs	133,640	204,680	37,940	52,610	28%	26%
Agriculture, Mining	3,040	3,210	0	0	0%	0%
Construction	13,680	19,040	0	0	0%	0%
Manufacturing	11,290	17,760	3,510	5,150	31%	29%
Transp., Comm., Utilities	6,020	8,380	420	570	7%	7%
Wholesale Trade	3,940	6,230	1,230	1,790	31%	29%
Retail Trade	28,640	42,850	5,310	7,660	19%	18%
F.I.R.E	5,420	7,530	4,750	5,260	88%	70%
Services	32,010	58,480	22,720	32,180	71%	55%
Government	29,600	41,200	N/A	N/A	N/A	N/A

Source: ABAG, CTOD, Strategic Economics. Numbers may not add due to rounding.

Since Travis AFB is the largest employer in the County, it is difficult to say whether the TOD Demand estimate wholly captures the demand for employment near fixed-guideway stations in Solano. Among private sectors, the Services sector again shows the most potential demand for locating near transit. Aside from the Services sector, Solano has high employment in sectors with weak demand for transit (such as Retail and non-tech manufacturing), and low employment in sectors with strong demand for transit (such as FIRE or Wholesale Trade).

SONOMA COUNTY

Market and Spatial Context

Current Distribution of Jobs and Access to Transit

Employment in Sonoma County is concentrated along Highway 101, primarily within incorporated towns in this area. There is also some employment in the City of Sonoma and its surrounding areas, but this part of the County has low regional connectivity either through public transit or via the automobile.

Santa Rosa is the primary employment center in the County, and is a major commute destination for much of Sonoma and Marin Counties. Combines with residential stops along the way, the future SMART rail station could increase Santa Rosa and San Rafael's presence as the major employment centers for Sonoma and Marin. The demand for future employment space in the Downtowns of these two cities could, in part, hinge on the traffic levels along Highway 101.

Commercial Real Estate

Office and Flex Parks lining Highway 101 suffered greatly with the decline in the regional economy in 2001. These areas are still experiencing a slow recovery, and vacancy rates are high outside of the County's incorporated areas. Santa Rosa is the primary real estate market in the County, and has the second lowest vacancy rate in the county at 12 percent. Slightly more than five of the eleven million square feet of office space in the County are in Santa Rosa.

Forecast Analysis for TOD-Based Employment

Expected Employment Growth

Sonoma County is projected to experience significantly faster growth than the regional average from 2000 to 2030, at 56 percent compared to 39 percent. As with Solano, this major increase is somewhat misleading because Sonoma has a small employment base to start, relative to other counties. Service and Business Service jobs are expected to increase by more than 70 percent, to a total of nearly 122,000 jobs in 2030. While it is currently a small part of Sonoma's economy, Wholesale Trade is expected to more than double its employment base, relative to a 38 percent increase regionally.

Forecasts for Transit-Oriented Employment

Table 19: Transit-Oriented Employment Projections, Sonoma County, 2000 and 2030

County	Jobs/Share of Jobs in Transit Planning Areas, 2000	Transit Planning Area Job Projections, 2030			Total ABAG Projections 2003 2030
		<i>Projections 2003</i>	<i>Smart Growth Vision</i>	<i>CTOD Potential Demand Estimate</i>	
Sonoma	17,000	37,000	43,000	101,000	321,000
employment	8%	12%	13%	31%	

Source: ABAG, CTOD, Strategic Economics

Although only eight percent of Sonoma's employment is in the transit planning areas, the share of jobs near transit is expected to increase, particularly with the introduction of the proposed SMART system. *Projections 2003* and the Smart Growth vision are comparable in anticipating a four to five point increase in the total share of jobs near transit. However, the TOD demand estimate shows a potential demand that

is more than double both projections, and more than triple the current share of jobs in the transit planning areas.

Table 20: Share of Sonoma County Jobs with Demand for TOD, 2005 and 2030

	ABAG Sonoma County Projections		Jobs with Strong Demand for TOD		Share of All Jobs	
	2005	2030	2005	2030	2005	2030
Total Jobs	224,270	321,020	70,170	100,690	31%	31%
Agriculture, Mining	8,080	8,310	0	0	0%	0%
Construction	15,770	21,690	0	0	0%	0%
Manufacturing	33,940	47,070	9,920	14,170	29%	30%
Transp., Comm., Utilities	8,670	11,940	600	830	7%	7%
Wholesale Trade	10,690	15,270	1,760	2,480	16%	16%
Retail Trade	41,270	56,950	6,920	9,440	17%	17%
F.I.R.E	12,680	17,450	10,650	14,480	84%	83%
Services	78,370	121,990	40,320	59,280	51%	49%
Government	14,800	20,350	N/A	N/A	N/A	N/A

Source: ABAG, CTOD, Strategic Economics. Numbers may not add due to rounding.

As with most of the Region, the projected increase in Service jobs, and business service jobs in particular, is expected to make up a large share of the employment with an interest in locating near transit. The FIRE industry also provides a boost in the potential demand for office space near transit. Finally, Sonoma's projected growth 41 percent growth in the high technology industries is expected to boost TOD demand significantly by 2030.

II. HOUSING NEAR TRANSIT

The following chapter considers the market potential for housing near transit in each of the nine San Francisco Bay Area counties. It compares three unique projections for housing near transit through the year 2030: the Association of Bay Area Governments' (ABAG's) *Projections 2003* estimate, ABAG's Smart Growth Vision, and a TOD demand estimate developed by the CTOD.

As with the employment analysis, the purpose of this chapter is to assess how well ABAG's projections for transit areas respond to the potential demand for TOD over time among households fitting the "TOD profile." The employment CTOD demand estimate considered the tendency of certain types of industries to locate near transit by looking at employees who take transit to work, and the projected job growth in transit-based industries. Similarly, the residential CTOD demand estimate considers the tendency of various household types and age groups to locate near transit, and examines the projected growth of these groups in each county or subcounty area.

The CTOD estimate only measures those households that consider transit to be an amenity to their residence based on a demographic "TOD profile," and should not be considered a measure of total residential demand around transit stations or corridors. Other types of households not fitting the "TOD profile" may still live near transit. Therefore when the CTOD demand estimate is below ABAG *Projections 2003*, there is still potentially additional market demand for housing in the transit area, though it may not be specifically demand for TOD housing types. When the CTOD demand estimate exceeds *Projections 2003*, there is an unmet demand for TOD that could be absorbed through future land use policy efforts to encourage TOD.

REGIONAL OVERVIEW

This and following sections summarize and compare the potential demand for housing near transit in 2030 ("CTOD demand"), the *Projections 2003* estimate of housing units in the designated Transit Planning Areas in 2030, and the Smart Growth Vision estimate of housing units in Transit Planning Areas in 2030.

Living Near Transit Now

Table 21 shows the number of households currently living in the transit planning areas throughout the region. Younger households – particularly those in the 15 to 34 year age group – have a much greater tendency to locate near transit than other age groups in the same household type categories. Non-family households in particular tend to live near transit more than family households, possibly because there are fewer children in these categories.

The report *Hidden in Plain Sight: Capturing the Demand for Transit* compares the San Francisco metropolitan region with other regions featuring extensive transit systems; namely: Boston, Chicago, New York, and Philadelphia. Compared with these systems, San Francisco has a lower than average capture rate for every household type and age category described in **Table 21**¹⁴. It is possible, therefore, that the San Francisco region could support significant growth in the number of housing units available near transit.

¹⁴ The "capture rate" refers to the share of households in the region who are living within the transit planning areas. This percentage is later used to calculate the potential demand for housing near transit.

Table 21: Households Near Transit in the Bay Area, 2000

Household Type Age Group	Bay Area Transit Planning Areas	
	Households Living Near Transit 2000	Capture Rate 2000
<i>Householder Non-family Alone</i>		
15 to 34 years	51,330	42%
35 to 64 years	105,510	33%
65 years and older	56,900	29%
<i>Householder Non-family Not Alone</i>		
15 to 34 years	44,310	38%
35 to 64 years	28,610	28%
65 years and older	4,080	26%
<i>Married Couple Family Households</i>		
15 to 34 years	56,340	26%
35 to 64 years	133,910	17%
65 years and older	33,580	18%
<i>Other Family Households</i>		
15 to 34 years	28,440	31%
35 to 64 years	56,830	24%
65 years and older	13,580	25%

Source: CTOD, U.S. Census 2000

Projected Households Near Transit

Regionally, approximately 201,500 additional households will have a potential interest in living near transit by 2030, representing an increase of nearly one third from the current number of households near transit. The potential demand for housing near transit is by no means evenly distributed across the region, which the following sections show by describing the demand from county to county.

Overall, the CTOD demand estimate expects the share of households with a potential demand for transit will decline slightly from its current share, as a result of major shifts in certain demographic groups with a strong or weak tendency to locate near transit in 2000.

For example, the population aged 65 and older – and corresponding households with a head aged 65 and older – is expected to grow by more than 150 percent by 2030. In 2000 this group had the lowest tendency to live near transit in nearly every county throughout the region, and as a result, the CTOD demand estimate showed no major increase in the number of households with a preference for housing near transit. In fact, *Hidden in Plain Sight* shows that most of the recent literature on consumer demand for housing reports a distinct shift in the demand among older households for smaller homes with access to a greater mix of amenities. Households with no children, including empty-nester households looking to move to smaller, more manageable homes, have a greater tendency to live in more urban areas than those households with children.

These observations prompted the CTOD to incorporate a growing preference for TOD housing among older households into *Hidden in Plain Sight*, by increasing the current share of households aged 65 and older by ten percent. To account for a growing preference among for TOD in this analysis, CTOD

applied the average 2030 capture rate for this age group for all five extensive systems¹⁵ in the United States, to each Bay Area county.

Younger non-family households are historically the most likely demographic to locate near transit, but this group is expected to experience low growth rates in the Bay Area between now and 2030. This causes a slight lag in the potential demand for housing near transit.

The methodology used by CTOD to estimate the potential demand among households for TOD is highly conservative, carrying existing capture rates for each county through the next 30 years. Even given this conservative estimate, there is considerable demand for new housing development near transit stations. The reality could be even more optimistic, showing a growth in preference for transit caused not only by national changes in preference, but also by improvements in the existing transit system, such as the establishment of new transit corridors.

¹⁵ The extensive systems are San Francisco, Chicago, New York, Boston, and Philadelphia.

ALAMEDA COUNTY

For the purposes of this analysis, Alameda County has been divided into two sub county areas: northern Alameda runs from the city of Albany south through San Leandro, while the remainder of the county is classified as southern Alameda. The purpose of dividing Alameda into its respective areas is to account for significant differences in the demography and transit accessibility of the two sub county areas. This is particularly critical when calculating the potential household demand for transit, because a countywide estimate washes out the significant concentration of households near transit in north Alameda.

Living Near Transit Now

The share of households living near transit illustrates the difference between north and south Alameda. Nearly half of all of the 240,000 households in north Alameda County live near transit, versus 17 percent of the 283,000 households in south Alameda County.

The household types living near transit in north Alameda County are similar to those living in the rest of the sub-county area. Non-family alone households are slightly more concentrated near transit than other types of households, as are married couple households in the 15 to 34 year age bracket.

The concentration of certain household types near transit is significantly more apparent in South Alameda County. While married couple family households in the 15 to 34 year age bracket represent 11 percent of the households in South Alameda, they represent 14 percent of the households living near transit. Conversely, married couple family households in the 35 to 64 year age bracket represent nearly 40 percent of all households in the area, but only 28 percent of households near transit. This is likely due to the increased presence of children in the middle age group households compared with the younger age groups. Non-family households are concentrated near transit in both north and south Alameda, but this occurs to a greater extent in south Alameda, particularly for households in age groups under 64 years.

Projected Households Near Transit

The CTOD demand estimate projects an additional potential demand for TOD among 51,000 households in north Alameda, and 13,000 households in south Alameda by 2030.

North Alameda County could experience concentrated growth near transit as a result of significant increases in the number of young and non-family households, which fit the “TOD profile.” Conversely, the household types projected to grow over time in south Alameda County do not have a strong tendency to locate near transit. As a result, the increased demand for housing near transit in the south is relatively low.

In north Alameda County, the CTOD demand estimate is higher than ABAG *Projections 2003*, but lower than the Smart Growth Vision. North Alameda County can easily accommodate the projected households in *Projections 2003* given the potential market demand, and may even underestimate household growth in this sub county area. The Smart Growth Vision estimate, which exceeds the demand estimate by nearly 30,000 households, may be a closer estimate of the housing growth needed to fully accommodate household demand in north Alameda.

Table 22: Households with a Potential Demand for TOD in Alameda County, 2030

	<i>TOTAL COUNTY HH 2000</i>	<i>HH NEAR TRANSIT 2000</i>	<i>TOTAL COUNTY HH 2030</i>	<i>HH NEAR TRANSIT 2030</i>
<i>North Alameda County</i>				
CTOD/SE	523,366	118,597	675,920	169,500
ABAG Projections 2003			675,920	153,710
ABAG Smart Growth Vision				193,580
<i>South Alameda County</i>				
CTOD/SE	523,366	47,837	675,920	67,120
ABAG Projections 2003			675,920	73,620
ABAG Smart Growth Vision				111,930

Sources: ABAG, CTOD, *Strategic Economics*

The CTOD demand estimate for south Alameda County is lower than both *Projections 2003* and the Smart Growth Vision. Again, this is a conservative estimate assuming no change in the share of households locating near transit between 2000 and 2030. Prospective changes in transit service throughout south Alameda County could increase the capture rate for certain types of households, as could improvements in the connectivity between transit stops and employment centers throughout the rest of the region. While the Smart Growth Vision housing growth estimate might be higher than achievable given demand, the number of additional households living near transit could range between the CTOD demand estimate and *Projections 2003*, adding demand for 35,000 to 51,000 units in north Alameda, and from 13,000 to 26,000 units in south Alameda by 2030.

CONTRA COSTA COUNTY

As in Alameda County, there are significant differences in the demographics and transit service from one part of Contra Costa County to the next. A countywide demand estimate would wash out these differences, creating a less accurate estimate of demand than sub county estimates. Therefore, Contra Costa County has been divided into three sub county areas: west Contra Costa, central Contra Costa, and east Contra Costa.

Living Near Transit Now

In west Contra Costa, nonfamily households are surprisingly less likely to locate near transit than many family household types. Married couple family households in the 15 to 34 year bracket are significantly more likely to locate near transit than other household types in west Contra Costa.

Central Contra Costa County transit areas capture an estimated 8 percent of all households in the County, but capture a full one-fifth of all nonfamily alone households in the 15 to 34 age bracket. All nonfamily households in central Contra Costa capture a larger than average share of households near transit, while family households capture an average to below average share of households near transit. While nearly 40 percent of all households in central Contra Costa County are married couple families in the age 35 to 64 category, this household type only account for 22 percent of all households living near transit.

Transit planning areas in east Contra Costa capture only a small share of the County's households, a large share of which is nonfamily households. While married couple family households dominate east Contra Costa households (a full 54 percent, total), they only make up 27 percent of all households in the transit planning areas.

Projected Households Near Transit

Table 23 compares the CTOD TOD demand forecast with ABAG's *Projections 2003* and the Smart Growth Vision forecasts for households in transit areas in west, central, and east Contra Costa in 2030. The CTOD forecast represents the most conservative estimate of potential household demand for residential units near transit. As the methodology states, this forecast is based on household capture rates in 2000, and assumes no change in the capture rates across time.

In west Contra Costa County, growth is expected to occur among household types that tend not to concentrate near transit, particularly among households 65 and older. The result is that the CTOD demand estimate for this subcounty area is lower than ABAG's projections. The difference, however, is not significant, and ABAG's Smart Growth Vision and *Projections 2003* could both be supported by household demand for units near transit.

Central Contra Costa County is projected to experience significant growth among younger nonfamily households, and significant but more moderate growth among young family households. As a result, the CTOD demand estimate anticipates major increases in the number of households with a potential demand for transit, exceeding both ABAG's Smart Growth Vision and *Projections 2003* estimates.

East Contra Costa County contains a small share of the County's households with a demand for TOD. While this share is expected to grow over time as eBART expands its service in east Contra Costa, the number of households with a demand for TOD in this area remains fairly small. However, because east Contra Costa is expected to experience significant growth in the number of households falling in the 35 to 64 year age category, even among nonfamily households, the CTOD demand estimate projects significant increases in the number of households with a demand for housing near transit.

Table 23: Households with a Potential Demand for TOD in Contra Costa County, 2030

	<i>TOTAL COUNTY HH 2000</i>	<i>HH NEAR TRANSIT 2000</i>	<i>TOTAL COUNTY HH 2030</i>	<i>HH NEAR TRANSIT 2030</i>
<i>West Contra Costa County</i>				
CTOD/SE	344,129	9,973	459,900	17,660
ABAG Projections 2003			459,900	23,450
ABAG Smart Growth Vision				23,350
<i>Central Contra Costa County</i>				
CTOD/SE	344,129	26,053	459,900	41,560
ABAG Projections 2003			459,900	29,410
ABAG Smart Growth Vision				29,370
<i>East Contra Costa County</i>				
CTOD/SE	344,129	14,210	459,900	22,240
ABAG Projections 2003			459,900	9,510
ABAG Smart Growth Vision				11,360

Source: ABAG, CTOD, Strategic Economics

The potential demand for housing near transit is widely variable. CTOD projects significantly less demand in west Contra Costa County, but significantly more in central and east Contra Costa County as a result of demographic shifts. Contra Costa County could therefore have potential demand for anywhere from 4,300 to 29,000 housing units, between the CTOD demand estimate and *Projections 2003*.

MARIN COUNTY

The addition of the Sonoma-Marín Area Rail Transit (“SMART”) line could have a significant influence on the potential supply and demand for housing near transit. Projecting the supply of, and demand for transit oriented housing in the Bay Area is most difficult in Sonoma and Marin Counties due to the unforeseeable impact of SMART.

Living Near Transit Now

Transit in Marin County is limited to the bus system and ferry at Larkspur and Tiburon, but there are already areas of higher density housing within the transit planning areas. Downtown San Rafael has become a mixed use, moderate density community and there is housing within walking distance of the Larkspur ferry terminal, with more housing proposed for that area.

Following regional trends, younger non-family households have a greater tendency to locate in the transit planning areas than other household types or age groups. Between 25 and 30 percent of these household types already live in the planning areas. Young family households are twice as likely to locate in the transit planning areas as their older counterparts.

Projected Households Near Transit

Household types with the lowest tendency to locate near transit are also the fastest growing in Marin County. Married couple family households over 34 years of age will make up an estimated 41 percent of all households in Marin, but only 8 percent of these households are likely to live near transit, according to the CTOD demand estimate. As a result, the share of households with a demand for housing near transit is projected to decline over the next 25 years, from 13.2 percent of the population to 12.5 percent.

Once SMART becomes a viable mode of transit for Marin residents, however, the total share of households with a demand for transit is likely to increase, more closely resembling or exceeding ABAG’s *Projections 2003* and Smart Growth Vision. The demand for housing units near transit could range from 1,700 to 3,100.

Table 24: Households with a Potential Demand for TOD in Marin County, 2030

	<i>TOTAL COUNTY HH 2000</i>	<i>HH NEAR TRANSIT 2000</i>	<i>TOTAL COUNTY HH 2030</i>	<i>HH NEAR TRANSIT 2030</i>
<i>Marin County</i>				
CTOD/SE	100,650	13,268	115,380	20,390
ABAG Projections 2003			115,380	16,380
ABAG Smart Growth Vision				20,690

Source: ABAG, CTOD, Strategic Economics

NAPA COUNTY

No significant changes are expected for Napa County's transit service, which currently consists of corridor bus service from Vallejo (in Solano County) North to Healdsburg and local shuttles in the cities along this corridor. The demand for transit-oriented development in Napa is unlikely to experience any major shifts over time as a result of transit itself, although the mixed use and walkable nature of the towns lining the bus corridor could become a more desirable place to live for a larger share of Napa's population.

Living Near Transit Now

Only six percent of all county households live near transit now, which is the smallest share of all nine counties in the Bay Area. Despite the small capture rate and near lack of transit in Napa, the households living in its transit planning areas along Highway 29 follow some of the trends found in more transit-connected areas of the region. The youngest, nonfamily households have the greatest tendency to live in these areas; a full 20 percent of all single householders under the age of 35 live near transit, compared with 14 percent in Sonoma and 10 percent in Solano County. Married couple households of all ages are the least likely to live near transit, and across all household types, only 3 to 7 percent of households age 65 and older live near transit.

Projected Households Near Transit

ABAG projects that the number of households older than 64 will increase by more than 80 percent, while households in other age groups will remain relatively stable. Since households older than 64 are the least likely to locate in the transit planning areas, the CTOD demand estimate projects only small net gains in demand by 2025. However, households will likely be attracted to the transit planning areas in Napa not for their regional connectivity, but for the walkable and mixed-use environment fostered in the towns along Highway 29. Therefore, the additional demand for housing in the transit planning areas could range from the CTOD low of 635, to the ABAG high of 1,663.

Table 25: Households with a Potential Demand for TOD in Napa County, 2030

	<i>TOTAL COUNTY HH 2000</i>	<i>HH NEAR TRANSIT 2000</i>	<i>TOTAL COUNTY HH 2030</i>	<i>HH NEAR TRANSIT 2030</i>
<i>Napa County</i>				
CTOD/SE	45,402	2,976	57,230	7,200
ABAG Projections 2003			57,230	4,120
ABAG Smart Growth Vision				4,640

Source: ABAG, CTOD, Strategic Economics

SAN FRANCISCO COUNTY

San Francisco's transit system covers a large section of the City (refer to Figure 6). As a result, San Francisco's transit planning areas include many residential neighborhoods within the city, and well over half of its residents live near transit. San Francisco is a fairly built-out city, and the potential future supply of housing near transit may be limited by the few opportunities for increased densities and infill development.

Living Near Transit Now

The share of households living near transit in 2000 range from 45 to 57 percent in San Francisco, depending on the household type and age group. A larger share of non-family alone households lives near transit than other types of households. While the youngest households are still the most likely to live near transit, the oldest households are frequently just as likely – if not more so – to live near transit than households in the 35 to 64 age group. In San Francisco in particular, none of the age groups or household types show a significant difference in the share of households living near transit.

Projected Households Near Transit

The CTOD demand forecast anticipates no significant change in the share of households living near transit between 2000 and 2030, for San Francisco County. ABAG's *Projections 2003* expects the number of households living near transit to increase by 53,500 units, which is justifiable given the expected development of new housing units in the transit planning areas and the pent up demand for housing in San Francisco County. The additional potential demand for units near transit will likely range from the CTOD low of 38,000 units, to the projected 53,500 units estimated in *Projections 2003*.

Table 26: Households with a Potential Demand for TOD in San Francisco County, 2030

	<i>TOTAL COUNTY HH 2000</i>	<i>HH NEAR TRANSIT 2000</i>	<i>TOTAL COUNTY HH 2030</i>	<i>HH NEAR TRANSIT 2030</i>
<i>San Francisco County</i>				
CTOD/SE	329,700	170,961	402,570	215,450
ABAG Projections 2003			402,570	224,520
ABAG Smart Growth Vision				255,620

Source: ABAG, CTOD, Strategic Economics

SAN MATEO COUNTY

BART, Caltrain, and the SamTrans bus system serve San Mateo County. The County is likely to experience some transit improvements over the next 25 years, in terms of the frequency of trains and the addition of two 3434 Stations in South San Mateo County.

Living Near Transit Now

Slightly more than one-fifth of all households in San Mateo County live near transit. Single households are the most likely to live near transit, while married couple family households are the least likely, overall. A significantly greater share of all households under 35 years of age are likely to live near transit compared with their older counterparts. Among married couple family households, for example, only 15 percent in the 35 to 64 age group live near transit, while this is true for 23 percent of households under 35.

Projected Households Near Transit

The CTOD demand estimate shows a significant increase in the potential demand for housing near transit in San Mateo County. The total number of households under the age of 65 is expected to decline, while the number of households in the 65 and older age category will more than double. Because transit areas capture a third of all single households in the 65 and older category, the significant growth among this age group creates a strong additional demand for housing near transit. As a result, the CTOD demand estimate corresponds with *Projections 2003*. The additional potential demand for housing near transit ranges from the CTOD low estimate of 13,400 to a *Projections 2003* high estimate of 15,200

Table 27: Households with a Potential Demand for TOD in San Mateo County, 2030

	<i>TOTAL COUNTY HH 2000</i>	<i>HH NEAR TRANSIT 2000</i>	<i>TOTAL COUNTY HH 2030</i>	<i>HH NEAR TRANSIT 2030</i>
<i>San Mateo County</i>				
CTOD/SE	254,103	54,642	301,020	68,360
ABAG Projections 2003			301,020	69,830
ABAG Smart Growth Vision				87,380

Source: ABAG, CTOD, *Strategic Economics*

SANTA CLARA COUNTY

The Altamont Commuter Express, Valley Transportation Authority light rail and buses, and Caltrain serve Santa Clara County. The County could experience significant transit improvements by 2030, including BART expansion to San Jose, and the expansion of VTA lines. These improvements could lead to increased demand for housing near transit.

Living Near Transit Now

Santa Clara follows the same pattern as most of the region with respect to who lives near transit now. Younger, non-family households have a greater tendency to live near transit; nearly 40 percent of all non-family alone households under the age of 35 live near transit. Again, households in the oldest age group are the least likely to live near transit, ranging from 21 to 27 percent.

Projected Households Near Transit

The CTOD Demand estimate projects that the number of households with a potential demand for transit will increase by over 47,000 by 2030, while *Projections 2003* anticipates an increase of nearly 78,000 households near transit. This extensive growth is expected to occur even though the households in demographics that tend to live near transit will become a smaller share of the total households overall. Households in the youngest age group are expected to experience little growth over the next 25 years, while households in the oldest age group nearly triple. The ABAG *Projections 2003* estimates for housing near transit are justifiable based on the potential demand, as they only project a 4 percent increase in the share of households living near transit.

Table 28: Households with a Potential Demand for TOD in Santa Clara County, 2030

	<i>TOTAL COUNTY HH 2000</i>	<i>HH NEAR TRANSIT 2000</i>	<i>TOTAL COUNTY HH 2030</i>	<i>HH NEAR TRANSIT 2030</i>
<i>Santa Clara County</i>				
CTOD/SE	565,863	132,348	768,060	180,920
ABAG Projections 2003			768,060	210,180
ABAG Smart Growth Vision				243,730

Source: ABAG, CTOD, *Strategic Economics*

SOLANO COUNTY

The majority of Solano County is undeveloped, and the bulk of development lines Interstate 80 stretching east towards Sacramento. Vallejo and Benicia, possibly the largest urbanized areas in the County, are served internally by local bus systems. The Vallejo Transit system also connects points as far north as Fairfield to the El Cerrito Del Norte BART station in Contra Costa County. The Vallejo ferry and Amtrak Capital Corridor trains also serve Solano County. The frequency of these systems, however, is low relative to systems in the rest of the region. The 3434 improvements are proposed for Amtrak Stations in Benicia and Fairfield/Travis AFB.

Living Near Transit Now

Slightly more than 7 percent of the households in Solano County live in the Transit Planning Areas. However, there is almost no concentration of one type of household or age group in the in these areas, although married couple households are slightly less likely to live near transit.

Projected Households Near Transit

The CTOD demand estimate projects that the number of households with a potential demand for transit will increase by over 5,000. ABAG *Projections 2003* anticipates a slightly greater increase of nearly 8,000 households, while the Smart Growth Vision expects the number of households near transit to more than triple. Improvements created by 3434 stations, and an increasing preference among households 65 and older for housing near transit could make the *Projections 2003* estimate achievable by 2030. However, the Smart Growth Vision projection might exceed the potential demand for housing near transit in Solano County.

Table 29: Households with a Potential Demand for TOD in Solano County, 2030

	<i>TOTAL COUNTY HH 2000</i>	<i>HH NEAR TRANSIT 2000</i>	<i>TOTAL COUNTY HH 2030</i>	<i>HH NEAR TRANSIT 2030</i>
<i>Solano County</i>				
CTOD/SE	130,403	9,884	193,370	22,670
ABAG Projections 2003			193,370	17,830
ABAG Smart Growth Vision				32,150

Source: ABAG, CTOD, *Strategic Economics*

SONOMA COUNTY

The addition of the Sonoma-Marin Area Rail Transit (“SMART”) line could have a significant influence on the potential supply and demand for housing near transit. Projecting the supply of, and demand for transit oriented housing in the Bay Area is most difficult in Sonoma and Marin Counties due to the unforeseeable impact of SMART.

Living Near Transit Now

The Transit Planning Areas may not have rail service yet, but in some cases these Areas already reflect the types of density and the demographics that one might find in TOD. This is particularly true of Petaluma and Santa Rosa. While the total households captured in these areas is 7 percent, the capture rate for young, non-family households is more than double this amount. Younger family households also tend to live in the Transit Planning Areas more frequently than older households. Across all household types, those households aged 65 or older have the lowest capture rates in the Transit Planning Areas.

As previous sections of this report have noted, there is significant evidence that Households with a head age 65 and older have a growing preference for living near transit; this assumption has been incorporated into the CTOD estimated potential demand for TOD described below.

Projected Households Near Transit

While most counties in the Bay Area are expected to experience some growth among households younger than 65, growth among households in Sonoma overwhelmingly is expected to occur among households 65 and older. As a result, additional potential demand for housing near transit would mainly be among households age 65 and older, and would be primarily concentrated among single person households in this age category.

The number of additional households with a potential demand for housing near transit will range from the *Projections 2003* estimate of 4,000 to the CTOD estimate of nearly 16,000. The bulk of this potential demand is among households age 65 and older, so achieving the high end of this range will involve preference changes in this age category. The addition of the SMART transit line could help Sonoma approach this high range estimate.

Table 30: Households with a Potential Demand for TOD in Sonoma County, 2030

	<i>TOTAL COUNTY HH 2000</i>	<i>HH NEAR TRANSIT 2000</i>	<i>TOTAL COUNTY HH 2030</i>	<i>HH NEAR TRANSIT 2030</i>
<i>Sonoma County</i>				
CTOD/SE	172,403	12,661	213,150	28,580
ABAG Projections 2003			213,150	16,720
ABAG Smart Growth Vision				28,100

Source: ABAG, CTOD, Strategic Economics

APPENDIX A: DEMAND METHODOLOGY

EMPLOYMENT DEMAND

Three major assumptions were used in developing the methodology to measure the demand for transit:

- When considering public transit as a desirable location factor, firms place an emphasis on strong regional connectivity. Therefore the demand estimate focuses on fixed-guideway systems only, as these generally denote a greater level of regional connectivity.
- One of the major reasons that a firm would consider locating near public transit is to provide an alternative commute option to its employees. Moreover, employees who take fixed-guideway transit to work tend to walk farther on their home side than on their work side. Therefore, one can assume that industries with high transit ridership will be located near transit.
- Industries that currently locate near transit will share many of the behavioral characteristics described in the above section. Identifying the industries currently near transit will automatically take the above characteristics into consideration as well.

By using 2000 Census Public Use Microdata (PUMS), the number of employed residents commuting to work on fixed-guideway transit was broken down by the industry in which the residents worked. Two measures were used to rank the extent to which the resulting industry categories were located near transit, and would thus have a future potential demand for transit-oriented space:

1. The share of employees in a given industry who commuted to work on fixed guideway transit, and;
2. The total share of fixed-guideway commuters in each given industry.

Each industry was ranked from highest to lowest for both factors. The industries were then grouped based on the quartiles for the two factors above, as shown in **Table A-1**.

Table A-1: Industry Ranking Based on Transit Ridership Factors, CTOD Employment Demand Methodology

<i>Demand:</i>	<i>Very Strong</i>	<i>Moderate</i>	<i>Moderate</i>	<i>Moderate</i>	<i>Low</i>	<i>None</i>
Factor 1 or Factor 2	Top quartile	Top quartile	Top quartile	Second Quartile	Second Quartile	Below Second Quartile
Factor 2 or Factor 1	Top quartile	Second quartile	Below second quartile	Second Quartile	Below Second Quartile	Below Second Quartile

After several bridges from one industry category to another, these are the industries with a very strong tendency to locate near transit, as shown in **Table A-2**.

Table A-2: Top Industries by Employee Transit Ridership, San Francisco Bay Area

3DIG NAICS	Total Employees Using Fixed Guideway Transit	Total Employees Recorded in Industry	Share Fixed-Guideway Employees per Industry	Share of All Fixed Guideway Employees	Description
541	25,604	368,880	6.9%	20.1%	Professional, Scientific, and Technical Services
523	7,081	48,909	14.5%	5.6%	Securities, Commodities Contracts, and other Financial Activities and Related Activities
521	6,952	51,383	13.5%	5.4%	Monetary Authorities -- Central Bank
524	5,096	53,682	9.5%	4.0%	Insurance Carriers and Related Activities
514	3,998	56,417	7.1%	3.1%	Information Services and Data Processing Services
511	2,574	33,333	7.7%	2.4%	Publishing Industries
721	2,903	38,063	7.6%	2.3%	Accommodation
921	2,877	34,038	8.5%	2.3%	Executive, Legislative, and other Governmental Support
221	1,864	19,653	9.5%	1.5%	Utilities
522	1,763	30,565	5.8%	1.4%	Credit Intermediation and Related Services
448	1,705	29,961	5.7%	1.3%	Clothing and Clothing Accessories Stores

Source: U.S. Census, CTOD, *Strategic Economics*

Once each industry was categorized with Very Strong, Moderate, Low, or No demand for space near TOD, capture rates were applied to the employment projections for each industry, as follows:

Very Strong: 100% employment capturable
 Moderate: 50% employment capturable
 Low: 25% employment capturable
 None: 0% employment capturable

The intention of this report is to estimate the potential demand for employment and housing TOD on a county-by-county basis, and compare this estimate with *Projections 2003* and Smart Growth Vision projections for the land surrounding transit stations or corridors. When completing the methodology, however, some geographic revisions were necessary to capture the unique conditions of a particular county. For example, both the housing and employment demand methodologies divided Alameda county into its north and south subareas to account for their vast differences in transit connectivity and development. The housing demand methodology further divided Contra Costa County into its east, central, and western areas to account for demographic variations between the three subareas.

In the case of the employment estimate, however, further methodological changes were necessary for Alameda and San Francisco counties. These changes are explained in the following sections:

Alameda County

The first step in the TOD employment demand estimate was to identify the major industries that locate near transit by looking at the mode to work for employees in each industry. Transit-friendly industries were identified at the regional level to account for cross-county commute patterns, and to focus specifically on commuters whose primary mode to work was fixed-guideway transit. This was the focus of the employment demand estimate because qualitative evidence shows that firms who take an interest in locating near transit also tend to locate in areas that are highly connected to the region, to draw from a larger pool of labor.

In the case of north Alameda County, however, this regional approach washed out the range of industries with an interest in locating in an area with such high transit connectivity, and resulted in an inaccurately low demand estimate. Two adjustments were made to the methodology in this case, to correct for this inaccuracy:

1. *The process of identifying the industries was repeated solely for north Alameda County.* This accounted for the greater diversity of industries that have selected north Alameda County as their primary employment center. As a result, more industries (as divided by 3-digit NAICS) were classified as having a very strong demand for transit than at the regional level.
2. *This process expanded the modes of commute to work to include all non-driving modes.* The densities and bus and bike connectivity in north Alameda County attract a disproportionately large number of employed residents who bike or walk to work. However, the regional methodology did not account for these modes to work because the share of employed residents commuting via these modes is less significant at the regional level. These commuters made up a strong enough share of north Alameda's labor force that their inclusion in this methodology was warranted.

Addition of Government Employment in the North Alameda County Estimate

Generally, jobs in the government sector were not included in the TOD estimates because the data sources used to develop these estimates, particularly County Business Patterns, did not incorporate information about government jobs. However, in San Francisco and Alameda County, the government sector is a major employment, and most of this employment is centered along transit.¹⁶

North Alameda County – particularly Downtown Oakland and the University of California Berkeley campus – is a major location for government based employment and therefore was included in this estimate. There were two steps to incorporating government employment in the north Alameda County estimate:

1. Include general government employment
2. Include UC Berkeley

General government employment was estimated separately from UC Berkeley because ABAG includes higher education in the services sector, and it is underestimated in the original CTOD methodology. The share of government employment in north Alameda County was estimated using the *Projections 2003* forecast of “Other Jobs” in 2030 for the TAZ surrounding transit in Albany, Berkeley, Oakland, and San Leandro, and applying the share of “Other Jobs” that are government jobs at the county level.

UC Berkeley recently released its 2020 Long Range Development Plan, with an estimate of current employees working on the main campus, and a projection of future employees.¹⁷ The current campus estimate of 12,940 jobs, and 2020 estimate of 15,810 jobs was netted out of the 2030 Services sector forecast in *Projections 2003*. It was then assumed that 100 percent of the 2020 Long Range Development Plan jobs would be located near transit, as the campus is transit oriented. The Long Range Development Plan does not account for an employment increase from 2020 to 2030, therefore it is assumed that employment would not increase significantly over that 10-year period, as the UC system is currently under pressure to expand significantly.

¹⁶ Government is also a major employer in Solano County, where Travis Air Force Base is located; however, these jobs have a limited potential demand for TOD as the base is not adjacent to transit.

¹⁷ University of California, Berkeley, *2020 Long Range Development Plan EIR*, January 2005. Available online at http://www.cp.berkeley.edu/LRDP_final/section_9.3.pdf.

San Francisco County

After much consideration, it was determined that the methodology developed to estimate the potential employment demand for TOD could not be applied to San Francisco County. The basis of the CTOD methodology was to identify industries with a stronger interest in locating near transit and to consider their growth over time. In San Francisco, however, a full 70 percent of employment is in the transit corridors or near transit stations. Most industries are so well served by transit already that it is impossible to identify certain industries with a future interest in locating near transit without completing extensive survey research. Even industries that do not show a strong preference for transit at the regional level – such as retail and personal services – are located in transit-served commercial corridors in San Francisco.

HOUSEHOLD DEMAND

Approach

The Center for Transit Oriented Development (CTOD) recently published *Hidden in Plain Sight: Capturing the Demand for Housing Near Transit*. In this study, the CTOD estimates the potential demand among various household types for housing near fixed-guideway transit systems in major metropolitan areas throughout the United States.

CTOD used a methodology similar that in the national study to estimate the potential demand for housing near transit for each county in the San Francisco Bay Area. In the following chapter the demand estimate is compared with household projections from *Projections 2003* and the Smart Growth Vision.

CTOD Demand Estimate Methodology

The household demand estimate follows the basic methodology developed by the CTOD for the national TOD market study, but it has been revised to account for the greater level of geographic precision required for a county-by-county analysis. Following are the basic steps of the methodology used in this report:

1. Calculate the total number of households in the type and age categories shown in **Table A-3**, for each transit planning area and each county using 2000 Census data. The age categories refer to the age of the household head.

Table A-3: Household Type and Age Categories used in CTOD Demand Estimate

Householder non family alone	Married couple family households
Household Head 15 to 34 years	Household Head 15 to 34 years
Household Head 35 to 64 years	Household Head 35 to 64 years
Household Head 65 years and over	Household Head 65 years and over
Householder non family not alone	Other Family Households
Household Head 15 to 34 years	Household Head 15 to 34 years
Household Head 35 to 64 years	Household Head 35 to 64 years
Household Head 65 years and over	Household Head 65 years and over

2. Sum the total households in each type and age group for all transit planning areas in the county. This represents the total number of households living near transit in 2000.
3. Divide this number by the total households in the county as a whole, to derive the “capture rate” for each household type and age group. As an example, the capture rates for Marin County and their derivation are shown in **Table A-4**.

Table A-4: Households Living Near Transit, Marin County

	<i>Households Living Near Transit 2000</i>	<i>Total Households 2000</i>	<i>Capture Rate</i>
Householder non family alone			
Householder 15 to 34 years	951	3,185	30%
Householder 35 to 64 years	3,333	17,243	19%
Householder 65 years and over	1,358	9,613	14%
Householder non family not alone			
Householder 15 to 34 years	761	3,231	24%
Householder 35 to 64 years	834	5,728	15%
Householder 65 years and over	83	971	9%
Married couple family households			
Householder 15 to 34 years	974	5,844	17%
Householder 35 to 64 years	2,834	33,655	8%
Householder 65 years and over	658	9,210	7%
Other Family Households			
Householder 15 to 34 years	313	1,761	18%
Householder 35 to 64 years	1,007	8,397	12%
Householder 65 years and over	162	1,812	9%

Source: CTOD, U.S. Census 2000

4. Project the total number of households in each age and type group by using a “household formation rate” from the 2000 Census. The “household formation rate” is calculated by dividing the total number of households of each type and age group (described in **Table 13**) by the total population in each age group. This shows the potential share of people in each age group who would be likely to be the head each of the various household types. The household formation rates for Marin County are shown in **Table 15**.
5. Apply the capture rates derived in Step 3 to the household projections derived in Step 4, to calculate the total number of households in each age and type category that would have a potential demand for housing near transit in 2030.
6. For counties with unique demographic differences in each subarea, complete the TOD demand estimate calculations for the subareas. The following counties were divided into subareas: Alameda (North and South); Contra Costa (West, Central, and East), and San Mateo (North and South).

Table A-5: Household Formation Rates, Marin County

	Share Population in Age Group that is Household Head
Householder non family alone	
Householder 15 to 34 years	6%
Householder 35 to 64 years	15%
Householder 65 years and over	29%
Householder non family not alone	
Householder 15 to 34 years	6%
Householder 35 to 64 years	5%
Householder 65 years and over	3%
Married couple family households	
Householder 15 to 34 years	11%
Householder 35 to 64 years	29%
Householder 65 years and over	28%
Other Family Households	
Householder 15 to 34 years	3%
Householder 35 to 64 years	7%
Householder 65 years and over	5%

Source: CTOD, U.S. Census 2000

The basic assumption guiding this methodology is that the transit planning areas in each county or subcounty will capture the same share of each household type/age group that they captured in 2000. This results in a highly conservative estimate, representing the lowest potential demand among households for housing near transit in 2030.

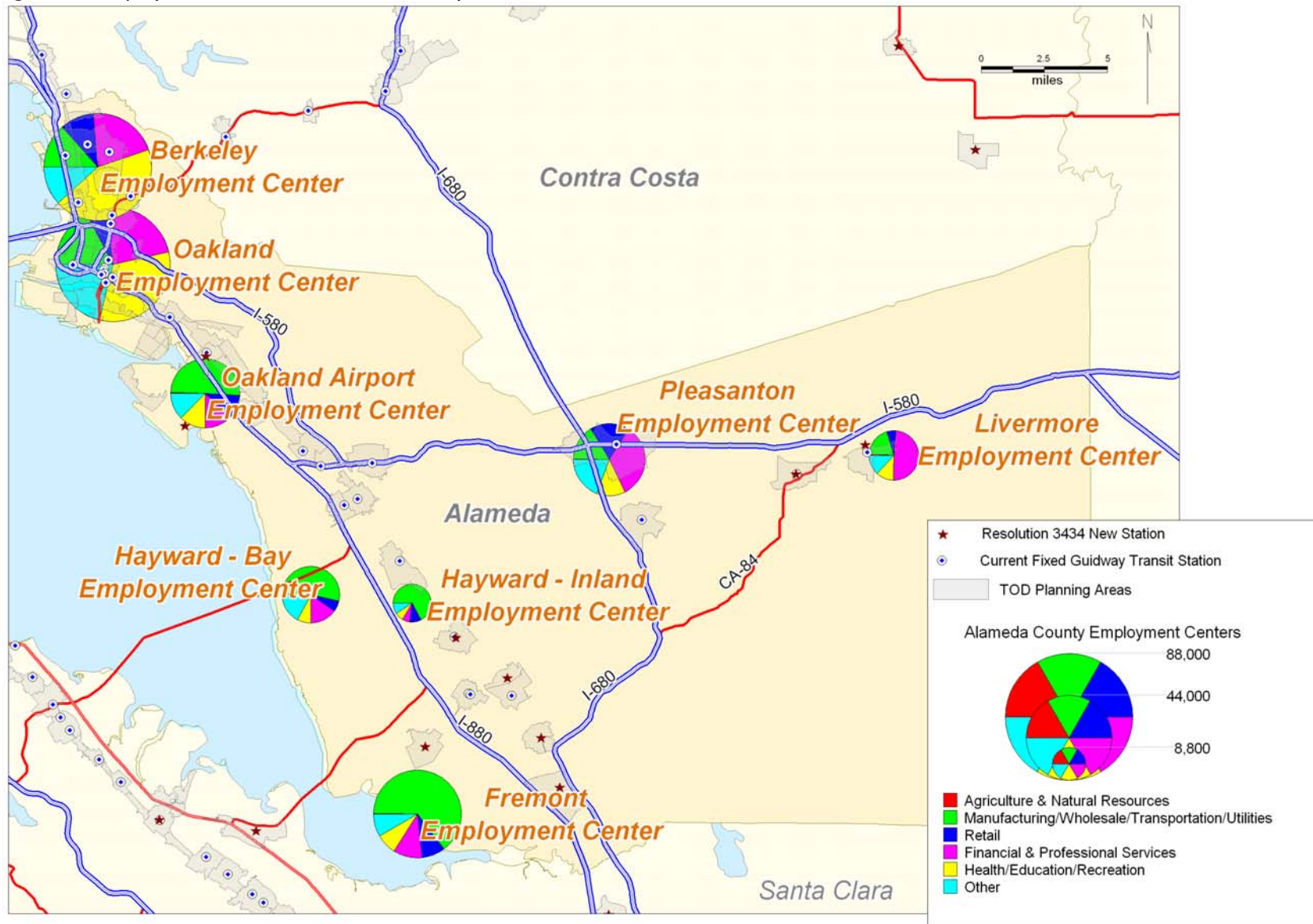
APPENDIX B: HOUSEHOLD DEMAND SUMMARY

	TOTAL COUNTY HH 2000	HH NEAR TRANSIT 2000	TOTAL COUNTY HH 2030	HH NEAR TRANSIT 2030	SHARE HH NEAR TRANSIT 2000	SHARE HH NEAR TRANSIT 2030
North Alameda County						
CTOD/SE	523,366	118,597	675,920	169,500	22.7%	25.1%
ABAG Projections 2003			675,920	153,710		22.7%
ABAG Smart Growth Vision				193,580		28.6%
South Alameda County						
CTOD/SE	523,366	47,837	675,920	67,120	9.1%	9.9%
ABAG Projections 2003			675,920	73,620		10.9%
ABAG Smart Growth Vision				111,930		16.6%
West Contra Costa County						
CTOD/SE	344,129	9,973	459,900	17,660	2.9%	3.8%
ABAG Projections 2003			459,900	23,450		5.1%
ABAG Smart Growth Vision				23,350		5.1%
Central Contra Costa County						
CTOD/SE	344,129	26,053	459,900	41,560	7.6%	9.0%
ABAG Projections 2003			459,900	29,410		6.4%
ABAG Smart Growth Vision				29,370		6.4%
East Contra Costa County						
CTOD/SE	344,129	14,210	459,900	22,240	4.1%	4.8%
ABAG Projections 2003			459,900	9,510		2.1%
ABAG Smart Growth Vision				11,360		2.5%
Marin County						
CTOD/SE	100,650	13,268	115,380	20,390	13.2%	17.7%
ABAG Projections 2003			115,380	16,380		14.2%
ABAG Smart Growth Vision				20,690		17.9%
Napa County						
CTOD/SE	45,402	2,976	57,230	7,200	6.6%	12.6%
ABAG Projections 2003			57,230	4,120		7.2%
ABAG Smart Growth Vision				4,640		8.1%
San Francisco County						
CTOD/SE	329,700	170,961	402,570	215,450	51.9%	53.5%
ABAG Projections 2003			402,570	224,520		55.8%
ABAG Smart Growth Vision				255,620		63.5%
San Mateo County						
CTOD/SE	254,103	54,642	301,020	68,360	21.5%	22.7%
ABAG Projections 2003			301,020	69,830		23.2%
ABAG Smart Growth Vision				87,380		29.0%
Santa Clara County						
CTOD/SE	565,863	132,348	768,060	180,920	23.4%	23.6%
ABAG Projections 2003			768,060	210,180		27.4%
ABAG Smart Growth Vision				243,730		31.7%
Solano County						
CTOD/SE	130,403	9,884	193,370	22,670	7.6%	11.7%
ABAG Projections 2003			193,370	17,830		9.2%
ABAG Smart Growth Vision				32,150		16.6%
Sonoma County						
CTOD/SE	172,403	12,661	213,150	28,580	7.3%	13.4%
ABAG Projections 2003			213,150	16,720		7.8%
ABAG Smart Growth Vision				28,100		13.2%
Total Bay Area						
CTOD/SE	2,466,019	613,410	3,186,600	861,650	24.9%	27.0%
Woods & Poole (2025 Projections)	2,470,100	429,145	3,601,500	985,440		27.4%
ABAG Projections 2003			3,186,600	849,270		26.7%
ABAG Smart Growth Vision				1,041,890		32.7%

Sources: Association of Bay Area Governments, Center for Transit Oriented Development, Metropolitan Transportation Commission

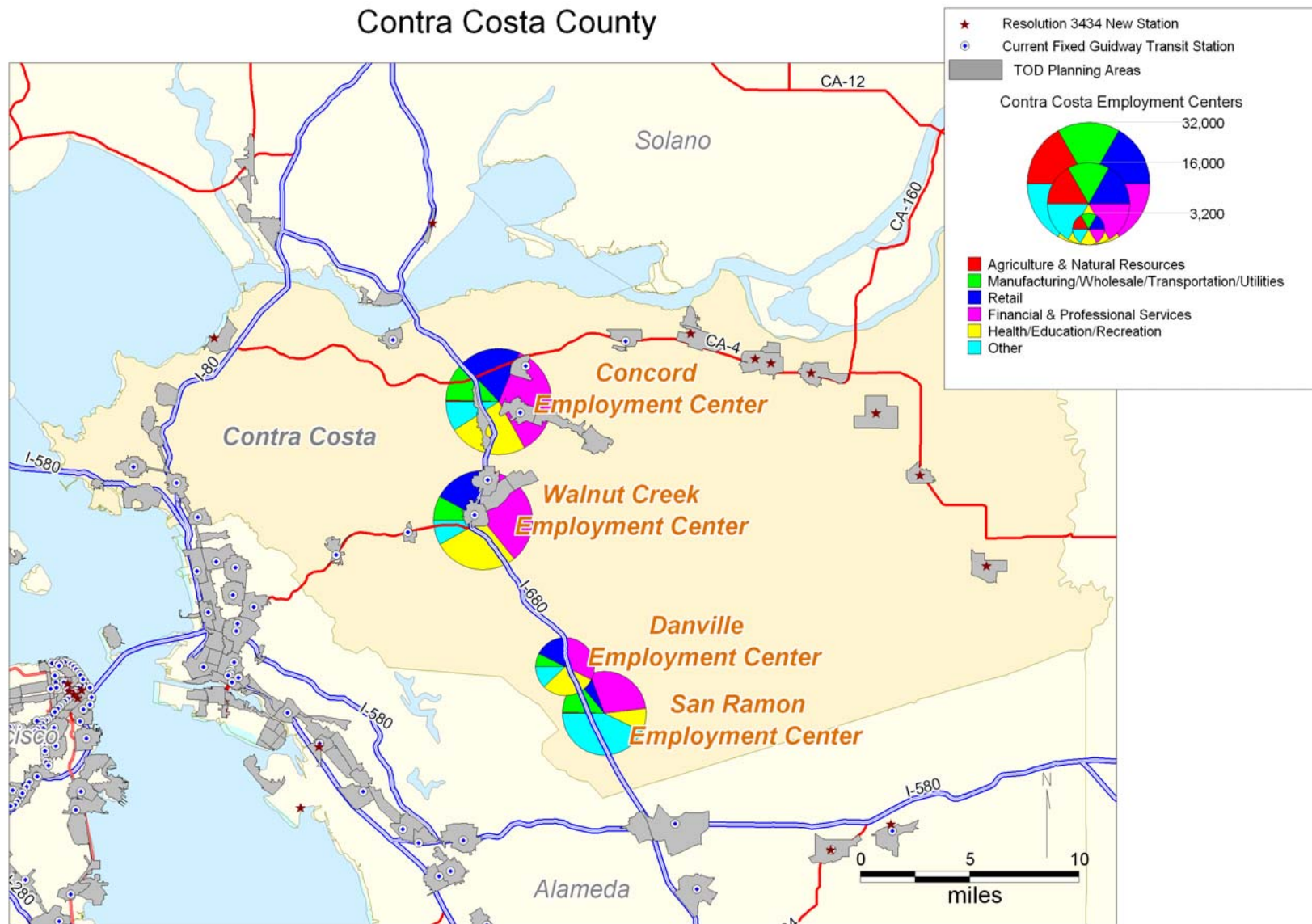
APPENDIX C: MAPS OF EMPLOYMENT CENTERS BY COUNTY

Figure 2: Employment Centers in Alameda County



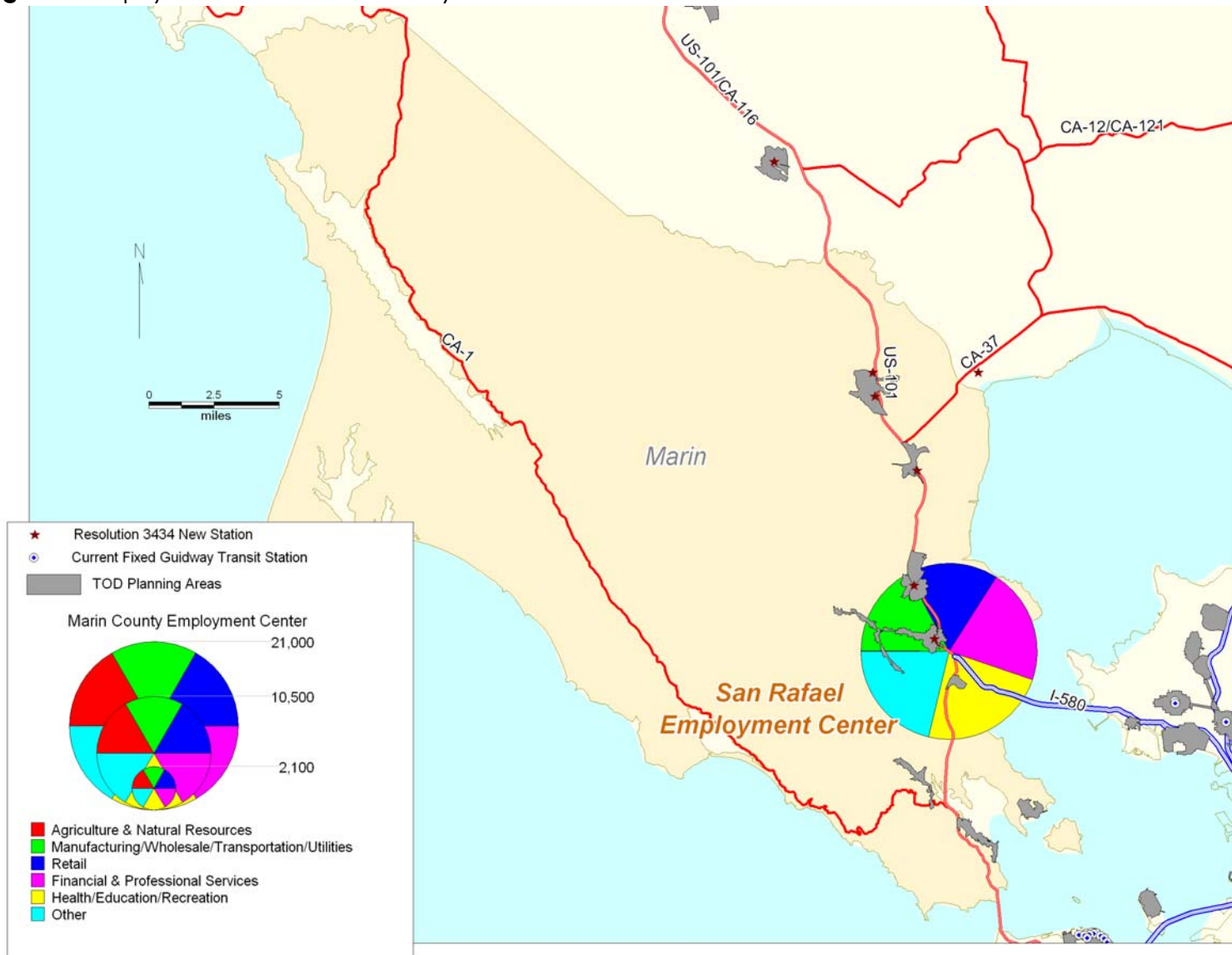
Source: CTOD, Center for Neighborhood Technology, MTC

Figure 3: Employment Centers in Contra Costa County



Source: CTOD, Center for Neighborhood Technology, MTC

Figure 4: Employment Centers in Marin County



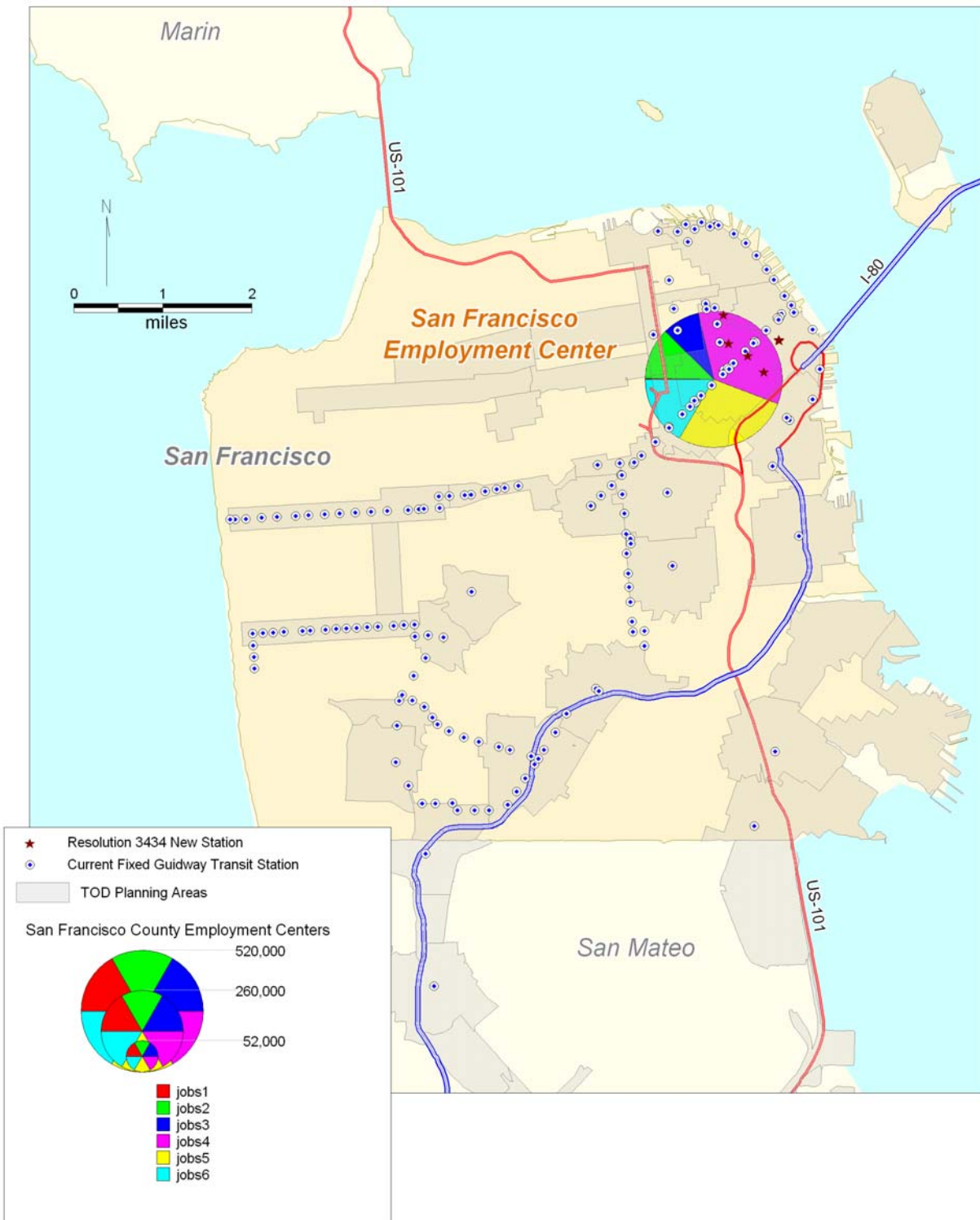
Source: CTOD, Center for Neighborhood Technology, MTC

Figure 5: Planning Areas and Regional Employment Center Map for Napa County
(no major employment centers)



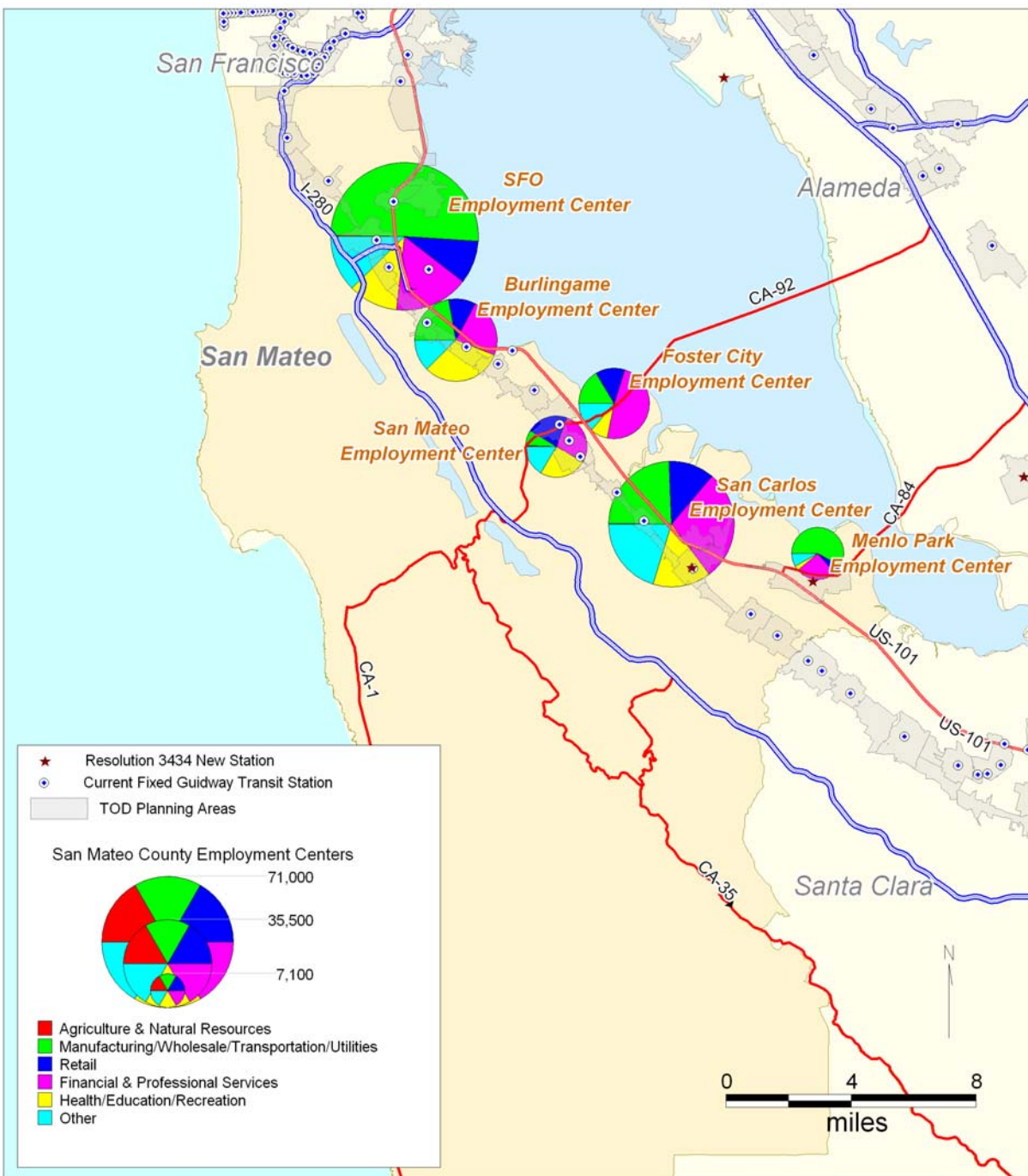
Source: CTOD, Center for Neighborhood Technology, MTC

Figure 6: Regional Employment Center Map for San Francisco County



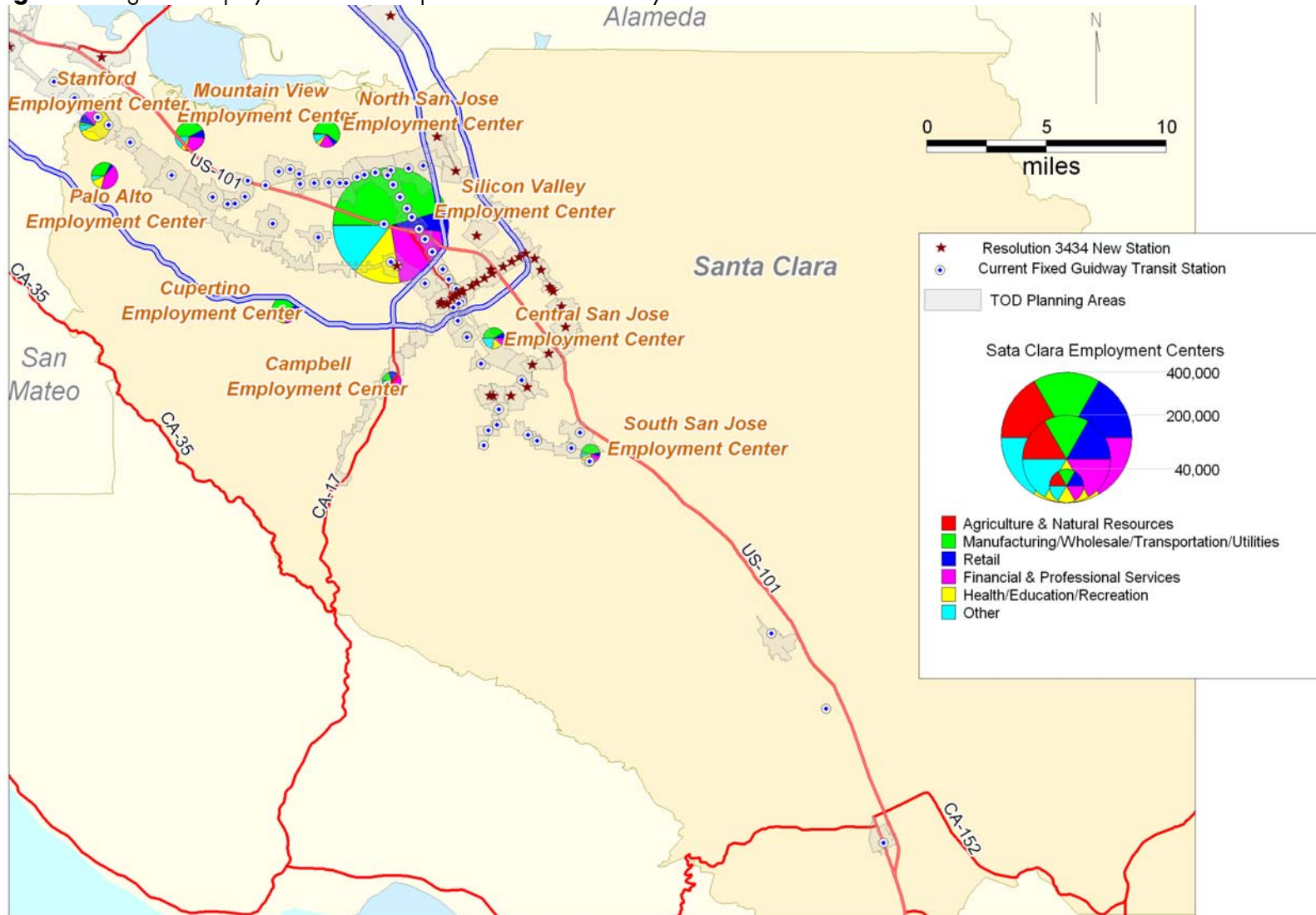
Source: CTOD, Center for Neighborhood Technology, MTC

Figure 7: Regional Employment Center Map for San Mateo County



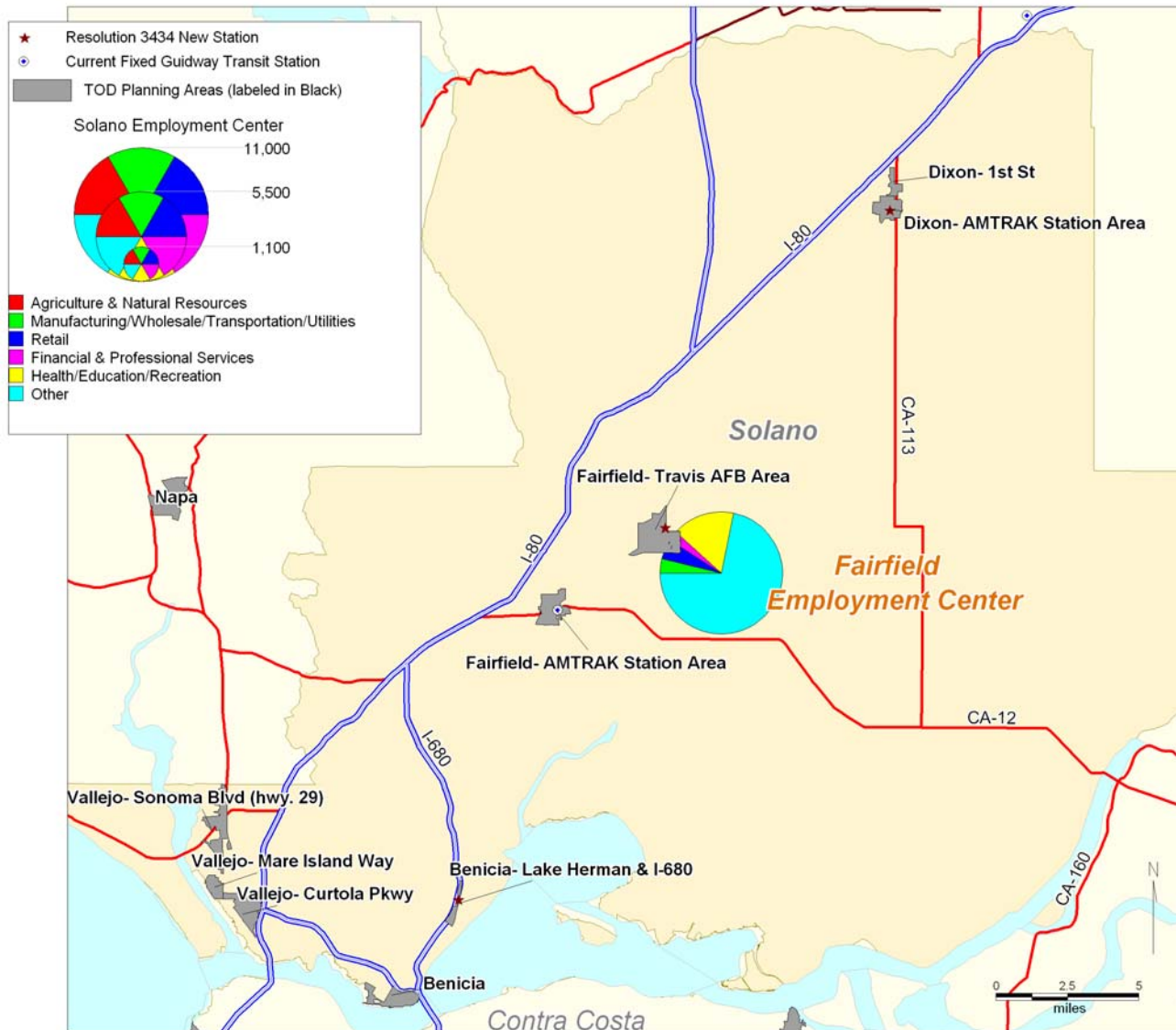
Source:CTOD, Center for Neighborhood Technology, MTC

Figure 8: Regional Employment Center Map for Santa Clara County



Source: CTOD, Center for Neighborhood Technology, MTC

Figure 9: Regional Employment Center Map for Solano County



Source: CTOD, Center for Neighborhood Technology, MTC

Transit-Oriented Development Demand Analysis
Appendix C: Maps of Employment Centers by County

Figure 10: Regional Employment Center Map for Sonoma County

